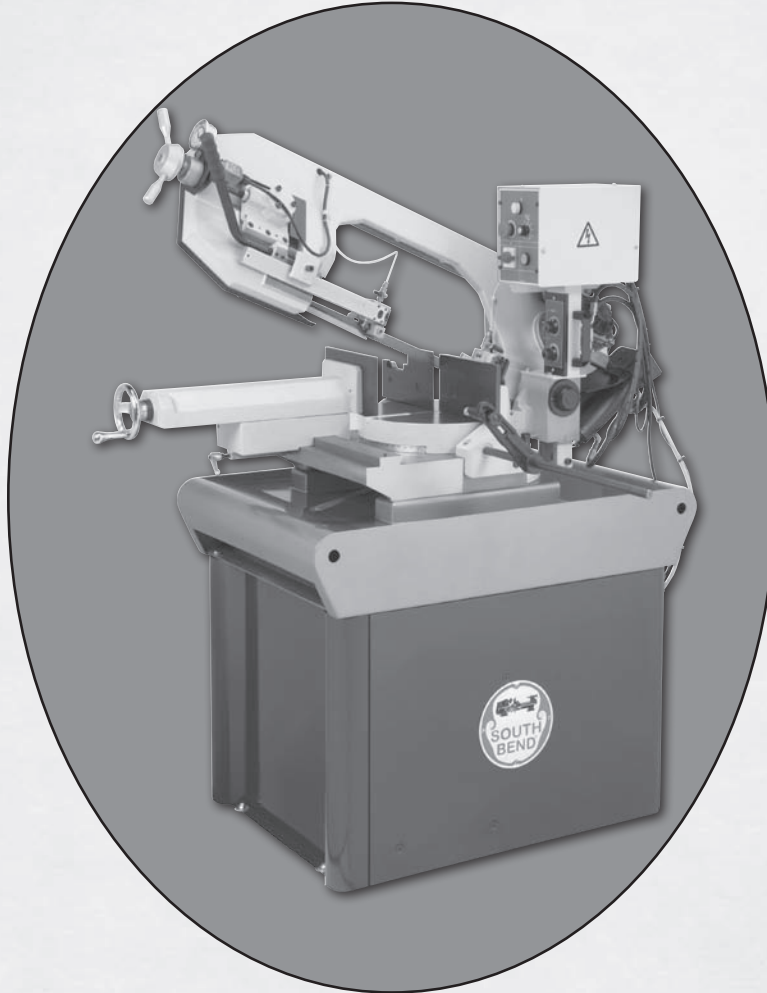




**9" x 12" HORIZONTAL VARIABLE SPEED  
METAL-CUTTING BANDSAW  
WITH SLIDING VISE  
MODEL SB1020**



**OWNER'S MANUAL**

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**South Bend Lathe Co.<sup>TM</sup>**

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# Scope of Manual

This manual helps the reader understand the machine, how to prepare it for operation, how to control it during operation, and how to keep it in good working condition. We assume the reader has a basic understanding of how to operate this type of machine, but that the reader is not familiar with the controls and adjustments of this specific model. As with all machinery of this nature, learning the nuances of operation is a process that happens through training and experience. If you are not an experienced operator of this type of machinery, read through this entire manual, then learn more from an experienced operator, schooling, or research before attempting operations. Following this advice will help you avoid serious personal injury and get the best results from your work.

# Manual Feedback

We've made every effort to be accurate when documenting this machine. However, errors sometimes happen or the machine design changes after the documentation process—so the manual may not exactly match your machine. If a difference between the manual and machine leaves you in doubt, contact our customer service for clarification.

We highly value customer feedback on our manuals. If you have a moment, please share your experience using this manual. What did you like about it? Is there anything you would change to make it better? Did it meet your expectations for clarity, professionalism, and ease-of-use?

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# Updates

For your convenience, any updates to this manual will be available to download free of charge through our website at:

**[www.southbendlathe.com](http://www.southbendlathe.com)**

# Customer Service

We stand behind our machines. If you have any service questions, parts requests or general questions about the machine, feel free to contact us.

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**Bellingham, WA 98227**  
**Phone: (360) 734-1540**  
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# About This Machine

## Capabilities

This metal cutting bandsaw uses a gravity-fed blade to make straight cuts through workpieces that are clamped in a vise. Since the workpiece is secured and remains stationary while the blade lowers automatically, accuracy and operator safety are maximized.

The vise on the Model SB1020 is capable of holding rectangular stock up to 9" x 12" and round stock up to 10".

After a cut is complete, the OFF switch is triggered and the motor automatically turns off.

## Features

In addition to its capabilities, the Model SB1020 has several features to increase versatility and efficiency.

The headstock can be rotated to make angled cuts from  $-45^{\circ}$ – $60^{\circ}$  while variable blade speeds ensure that the proper cutting speed is available for a variety of workpiece sizes and materials.

Both the downfeed rate and pressure are adjustable for fine-tuning each cutting operation and an adjustable auto-OFF power switch maximizes safety and minimizes energy use by turning the machine off at the end of every cut.

A flood coolant system, comprised of a coolant tank and pump in the machine base and an adjustable nozzle at the blade provide adequate coolant for optimum cutting efficiency and blade life.

A storage compartment in the cabinet base provides a convenient location for keeping spare blades or other accessories and the transport handle makes moving the machine easy.

# Identification

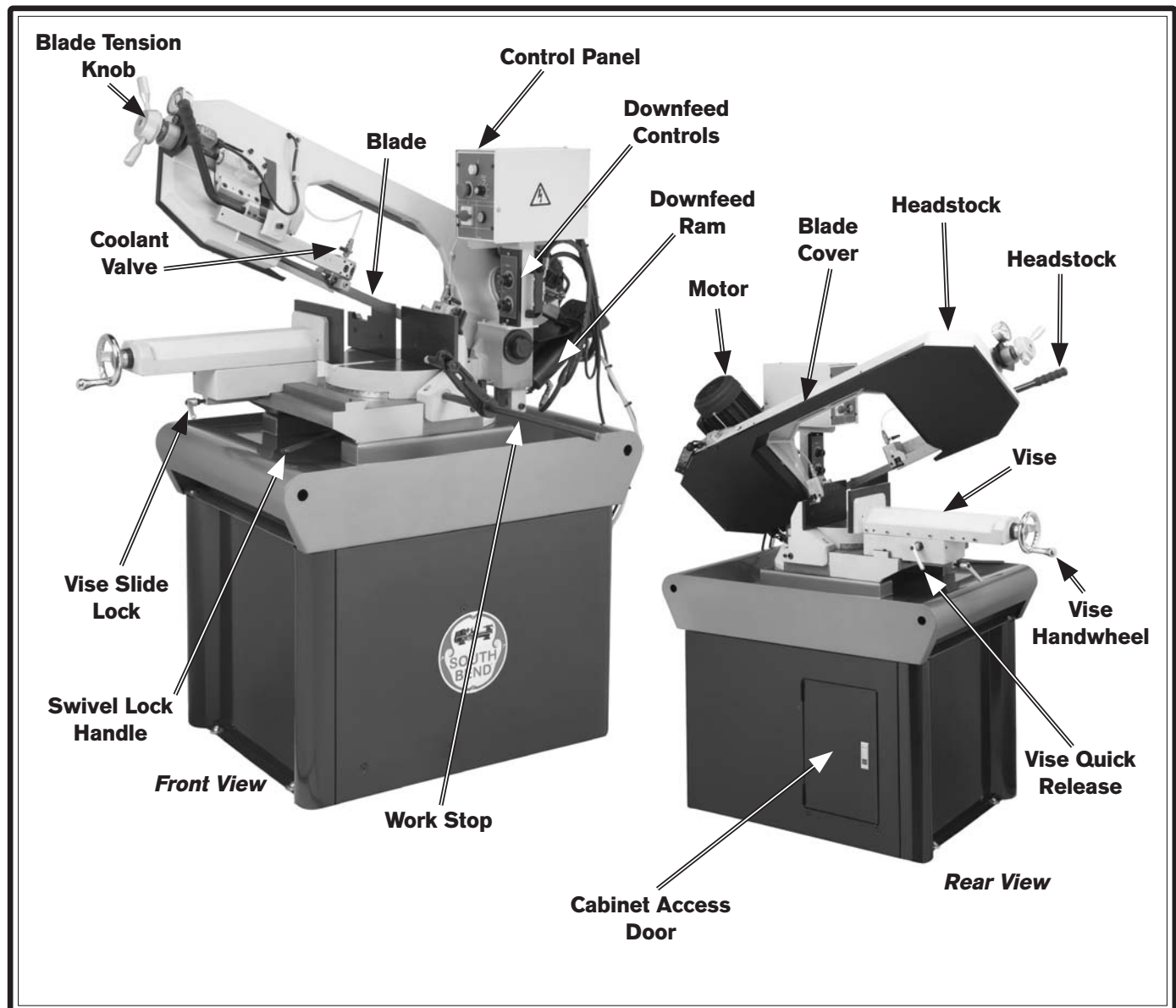


Figure 1. Identification.

## **!WARNING**

Serious personal injury could occur if you connect the machine to power before completing the setup process. **DO NOT** connect power until instructed to do so later in this manual.

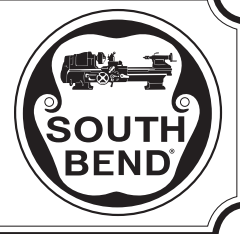
## **!WARNING**

Untrained users have an increased risk of seriously injuring themselves with this machine. Do not operate this machine until you have understood this entire manual and received proper training.



# Machine Specifications

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## Model SB1020 9" x 12" Horizontal Bandsaw

**Product Dimensions:**

Weight ..... 718 lbs.  
 Length/Width/Height ..... 55½" x 27½" x 60⅝"  
 Foot Print (Length/Width) ..... 27½" x 60⅝"  
 Space Required for Full Range of Movement (Length/Width/Height) ..... 65" x 47" x 75"

**Shipping Dimensions:**

Type ..... Wood Slat Crate  
 Weight ..... 838 lbs.  
 Length/Width/Height ..... 59" x 32" x 68"

**Electrical:**

Required Power Source ..... 110V or 220V, Single-Phase, 60 Hz  
 Switch ..... Safety ON/OFF Switch  
 Switch Voltage ..... 110V  
 Cord Length ..... 11½ ft.  
 Cord Gauge ..... 14 gauge  
 Full Load Amp Draw ..... 18 Amps @ 110V, 9 Amps @ 220V  
 Minimum Circuit Size ..... 20 Amps @ 110V, 15 Amps @ 220V  
 Plug Included ..... Yes  
 Included Plug Type ..... NEMA 5-15 for 110V  
 Recommended Plug Type for 220V ..... NEMA 6-15

**Motors:**

**Main**

Type ..... TEFC  
 Horsepower ..... 1½ HP  
 Voltage ..... 110V/220V  
 Phase ..... 3-Phase  
 Amps ..... 5.1A  
 Speed ..... 1725 RPM  
 Cycle ..... 60 Hz  
 Number Of Speeds ..... 1  
 Pre-Wired ..... 110V  
 Power Transfer ..... Sealed Worm Gear  
 Bearings ..... Shielded and Permanently Sealed

**Coolant Pump**

Type ..... Sealed/Waterproof  
 Horsepower ..... ⅛ HP  
 Voltage ..... 110V/220V  
 Phase ..... Single-Phase  
 Amps ..... 0.9/0.45A  
 Speed ..... 3450 RPM  
 Cycle ..... 60 Hz  
 Number Of Speeds ..... 1  
 Pre-Wired ..... 110V

**Main Specifications:****Operation Information**

Head Swivel.....	-45 deg to 60 deg.
Blade Speeds (Electrical Variable Speed) .....	92-360 FPM
Std. Blade Length .....	108¼"
Blade Size Range .....	1-1⅛"

**Cutting Capacities**

Angle Cuts .....	-45 to 60 deg.
Vise Jaw Depth .....	12⅝"
Vise Jaw Height .....	5½"
Max. Capacity Rect. Height At 90D .....	9"
Max. Capacity Rect. Width At 90D .....	12"
Max. Capacity Rnd. At 90D .....	10"
Max. Capacity Rect. Height At -45D .....	4¾"
Max. Capacity Rect. Width At -45D .....	7"
Max. Capacity Rnd. At -45D .....	6¾"
Max. Capacity Rect. Height At 45D .....	4¾"
Max. Capacity Rect. Width At 45D .....	7"
Max. Capacity Rnd. At 45D .....	7⅞"
Max. Capacity Rect. Height At 60D .....	4½"
Max. Capacity Rect. Width At 60D .....	6⅛"
Max. Capacity Rnd. At 60D .....	4½"

**Construction**

Wheel Construction Upper .....	Cast Iron
Wheel Construction Lower .....	Cast Iron
Body Construction .....	Cast Iron
Base Construction .....	Cast Iron
Stand Construction .....	Steel

**Other**

Wheel Size .....	12⅝"
Blade Guides Upper .....	Yes
Blade Guides Lower .....	Yes
Coolant Capacity .....	2½ Gal

**Table Info**

Floor to Cutting Area Height .....	35⅝"
------------------------------------	------

**Other Specifications:**

ISO Factory .....	ISO 9001
Country Of Origin .....	Taiwan
Warranty .....	1 Year
Serial Number Location .....	ID Label on Body Frame
Customer Setup and Cleaning Time .....	Approximately 1 Hour
Sound Rating (No Load) .....	80 db

**Features:**

Heavy-duty one-piece steel stand  
 Adjustable hydraulic down feed  
 Swivel mast with angle stops  
 Built-in coolant system  
 Storage cabinet  
 Dual position quick release vise with work stop  
 Double ball bearings on each side of blade  
 Quick change variable speed blade control

# Understanding Risks of Machinery

Operating all machinery and machining equipment can be dangerous or relatively safe depending on how it is installed and maintained, and the operator's experience, common sense, risk awareness, working conditions, and use of personal protective equipment (safety glasses, respirators, etc.).

The owner of this machinery or equipment is ultimately responsible for its safe use. This responsibility includes proper installation in a safe environment, personnel training and usage authorization, regular inspection and maintenance, manual availability and comprehension, application of safety devices, integrity of cutting tools or accessories, and the usage of approved personal protective equipment by all operators and bystanders.

The manufacturer of this machinery or equipment will not be held liable for injury or property damage from negligence, improper training, machine modifications, or misuse. Failure to read, understand, and follow the manual and safety labels may result in serious personal injury, including amputation, broken bones, electrocution, or death.

The signals used in this manual to identify hazard levels are defined as follows:



*Death or catastrophic harm WILL occur.*



*Moderate injury or fire MAY occur.*



*Death or catastrophic harm COULD occur.*



*Machine or property damage may occur.*

## Basic Machine Safety

- 1. Owner's Manual:** All machinery and machining equipment presents serious injury hazards to untrained users. To reduce the risk of injury, anyone who uses THIS item MUST read and understand this entire manual before starting.
- 2. Personal Protective Equipment:** Operating or servicing this item may expose the user to flying debris, dust, smoke, dangerous chemicals, or loud noises. These hazards can result in eye injury, blindness, long-term respiratory damage, poisoning, cancer, reproductive harm or hearing loss. Reduce your risks from these hazards by wearing approved eye protection, respirator, gloves, or hearing protection.
- 3. Trained/Supervised Operators Only:** Untrained users can seriously injure themselves or bystanders. Only allow trained and properly supervised personnel to operate this item. Make sure safe operation instructions are clearly understood. If electrically powered, use padlocks and master switches, and remove start switch keys to prevent unauthorized use or accidental starting.
- 4. Guards/Covers:** Accidental contact with moving parts during operation may cause severe entanglement, impact, cutting, or crushing injuries. Reduce this risk by keeping any included guards/covers/doors installed, fully functional, and positioned for maximum protection.



- 5. Entanglement:** Loose clothing, gloves, neckties, jewelry or long hair may get caught in moving parts, causing entanglement, amputation, crushing, or strangulation. Reduce this risk by removing/securing these items so they cannot contact moving parts.
- 6. Mental Alertness:** Operating this item with reduced mental alertness increases the risk of accidental injury. Do not let a temporary influence or distraction lead to a permanent disability! Never operate when under the influence of drugs/alcohol, when tired, or otherwise distracted.
- 7. Safe Environment:** Operating electrically powered equipment in a wet environment may result in electrocution; operating near highly flammable materials may result in a fire or explosion. Only operate this item in a dry location that is free from flammable materials.
- 8. Electrical Connection:** With electrically powered equipment, improper connections to the power source may result in electrocution or fire. Always adhere to all electrical requirements and applicable codes when connecting to the power source. Have all work inspected by a qualified electrician to minimize risk.
- 9. Disconnect Power:** Adjusting or servicing electrically powered equipment while it is connected to the power source greatly increases the risk of injury from accidental startup. Always disconnect power **BEFORE** any service or adjustments, including changing blades or other tooling.
- 10. Secure Workpiece/Tooling:** Loose workpieces, cutting tools, or rotating spindles can become dangerous projectiles if not secured or if they hit another object during operation. Reduce the risk of this hazard by verifying that all fastening devices are properly secured and items attached to spindles have enough clearance to safely rotate.
- 11. Chuck Keys or Adjusting Tools:** Tools used to adjust spindles, chucks, or any moving/rotating parts will become dangerous projectiles if left in place when the machine is started. Reduce this risk by developing the habit of always removing these tools immediately after using them.
- 12. Work Area:** Clutter and dark shadows increase the risks of accidental injury. Only operate this item in a clean, non-glaring, and well-lighted work area.
- 13. Properly Functioning Equipment:** Poorly maintained, damaged, or malfunctioning equipment has higher risks of causing serious personal injury compared to those that are properly maintained. To reduce this risk, always maintain this item to the highest standards and promptly repair/service a damaged or malfunctioning component. Always follow the maintenance instructions included in this documentation.
- 14. Unattended Operation:** Electrically powered equipment that is left unattended while running cannot be controlled and is dangerous to bystanders. Always turn the power **OFF** before walking away.
- 15. Health Hazards:** Certain cutting fluids and lubricants, or dust/smoke created when cutting, may contain chemicals known to the State of California to cause cancer, respiratory problems, birth defects, or other reproductive harm. Minimize exposure to these chemicals by wearing approved personal protective equipment and operating in a well ventilated area.
- 16. Difficult Operations:** Attempting difficult operations with which you are unfamiliar increases the risk of injury. If you experience difficulties performing the intended operation, **STOP!** Seek an alternative method to accomplish the same task, ask a qualified expert how the operation should be performed, or contact our Technical Support for assistance.

## Additional Metal Bandsaw Safety

- 1. Blade Condition.** A dull or damaged blade can break apart during operation, increasing the risk of operator injury. Do not operate with a dull, cracked or badly worn blade. Inspect the blade for cracks or missing teeth before each use.
- 2. Hand Placement.** Hands could be cut by the blade or crushed when lowering the headstock. Never position fingers or thumbs in line with the cut or under the headstock while it is moving.
- 3. Blade Guard.** Hands and fingers can easily be cut by the bandsaw blade. To reduce the risk of laceration injuries, do not operate this bandsaw without the blade guard in place.
- 4. Starting Position.** To reduce the likelihood of blade breakage and possible entanglement, never turn the saw **ON** with the blade resting on the workpiece.
- 5. Blade Replacement.** The blade can only make a safe and efficient cut if the teeth are facing the workpiece. When replacing blades, make sure the teeth face toward the workpiece. Wear gloves to protect hands and safety glasses to protect eyes.
- 6. Workpiece Handling.** A shifting workpiece can result in impact or laceration injuries. To reduce the risk of injury, always securely clamp the workpiece in the vise and use additional support fixtures if needed. Never hold the workpiece with your hands during a cut. Flag long pieces to reduce the risk of tripping over them.
- 7. Power Interruption.** Unplug the machine and turn the power switch **OFF** after a power interruption. If left plugged in and turned **ON**, this machine will start up when power is restored, resulting in possible entanglement, laceration, or amputation hazards.
- 8. Hot Surfaces/Sharp Edges.** Due to the cutting process, a freshly cut workpiece, chips, and some machine components can be hot enough to burn you and sharp enough to cut you. Allow components to cool and use safe handling methods to reduce the risk of these injuries.
- 9. Moving Blade.** A moving bandsaw blade presents a serious risk for laceration or amputation injuries. Always allow the blade to come to a complete stop before mounting or repositioning a workpiece in the vise. Never touch a moving blade.

## Preparation Overview

The purpose of the preparation section is to help you prepare your machine for operation. The list below outlines the basic process to follow to prepare your machine for operation. Specific steps for each of these points will be covered in detail later in this section.

### The typical preparation process is as follows:

1. Unpack the machine and inventory the contents of the carton.
2. Clean the machine and its components.
3. Make any necessary adjustments or inspections to ensure the machine is ready for operation.
4. Connect the machine to the power source.
5. Test run the machine to make sure it functions properly and is ready for operation.

## Things You'll Need

The items listed below are required to successfully set up and prepare this machine for operation.

### For Lifting

- A forklift or other power lifting device rated for the weight of the machine.
- Lifting Straps or Chains (rated for at least 1000 lbs. each)

### For Machine Setup

- Wrench 12mm
- Wrench 14mm

### For Power Connection

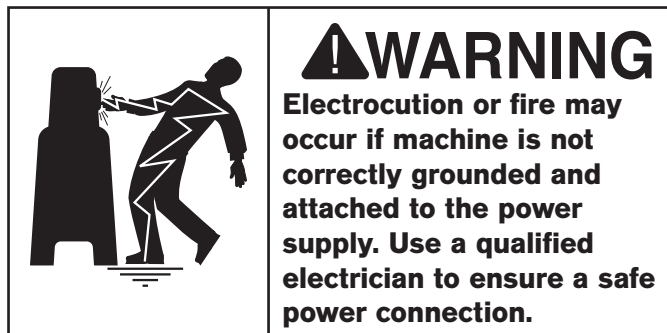
- A power source that meets the minimum circuit requirements for this machine. (Refer to the **Power Supply Requirements** section for details.)
- A qualified electrician to ensure a safe and code-compliant connection to the power source.

## Power Supply Requirements

### Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed.

To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by a qualified electrician in accordance with all applicable codes and standards.



### Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

**Full-Load Rating at 110V ..... 18 Amps**

**Full-Load Rating at 220V ..... 9 Amps**

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating.

If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements in the following section.

### Circuit Information

A power supply circuit includes all electrical equipment between the main breaker box or fuse panel in your building and the incoming power connections inside the machine. This circuit must be safely sized to handle the full-load current that may be drawn from the machine for an extended period of time.

**⚠ CAUTION**

**For your own safety and protection of property, consult a qualified electrician if you are unsure about wiring practices or electrical codes in your area.**

**Note:** The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult a qualified electrician to ensure that the circuit is properly sized for safe operation.

### Circuit Requirements for 110V

This machine is prewired to operate on a 110V power supply circuit that has a verified ground and meets the following requirements:

- Nominal Voltage ..... 110V/120V
- Cycle ..... 60 Hz
- Phase ..... Single-Phase
- Circuit Rating..... 20 Amps
- Plug/Receptacle (included) ..... NEMA 5-15

### Circuit Requirements for 220V

This machine can be converted to operate on a 220V power supply. To do this, follow the **Voltage Conversion** instructions included in this manual. The intended 220V circuit must have a verified ground and meet the following requirements:

- Nominal Voltage ..... 220V/240V
- Cycle ..... 60 Hz
- Phase ..... Single-Phase
- Circuit Rating..... 15 Amps
- Plug/Receptacle ..... NEMA 6-15

### Grounding Requirements

In the event of certain types of malfunctions or breakdowns, grounding provides a path of least resistance for electric current—in order to reduce the risk of electric shock.

#### For 110V Connection (Prewired)

This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug (similar to the figure below). The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

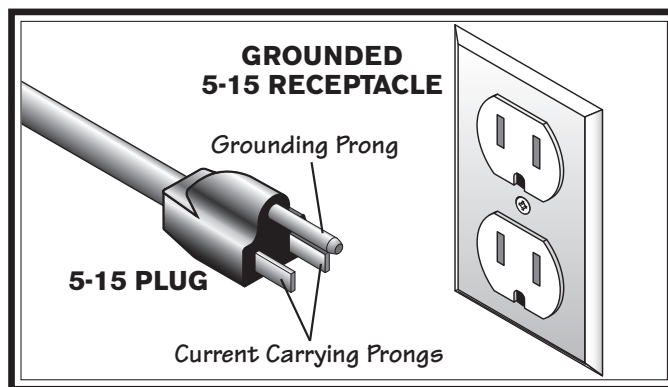


Figure 2. NEMA 5-15 plug and receptacle.

#### For 220V Connection

Use the plug type listed in the **Circuit Requirements** for this voltage. The listed plug (similar to the figure below) has an equipment-grounding wire to safely ground the machine. The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

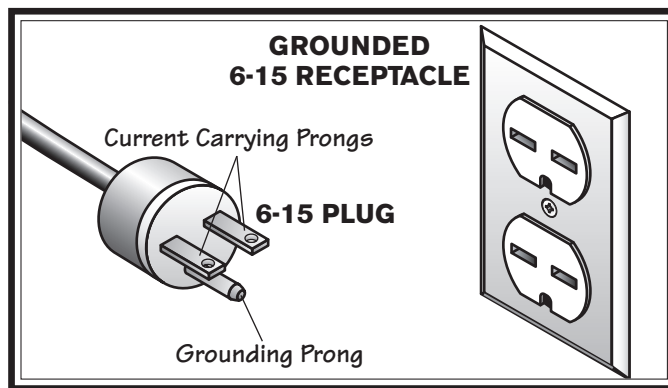


Figure 3. NEMA 6-15 plug and receptacle.

**⚠ WARNING**

**Serious injury could occur if you connect the machine to power before completing the setup process. DO NOT connect to power until instructed later in this manual.**

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded.

If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

**Extension Cords**

We do not recommend using an extension cord with this machine. If you must use one, only use it if absolutely necessary and only on a temporary basis.

Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle listed in the **Circuit Requirements** for the applicable voltage, and meet the following requirements:

- Minimum Gauge Size.....12 AWG**
- Maximum Length (Shorter is Better) ....50 ft.**

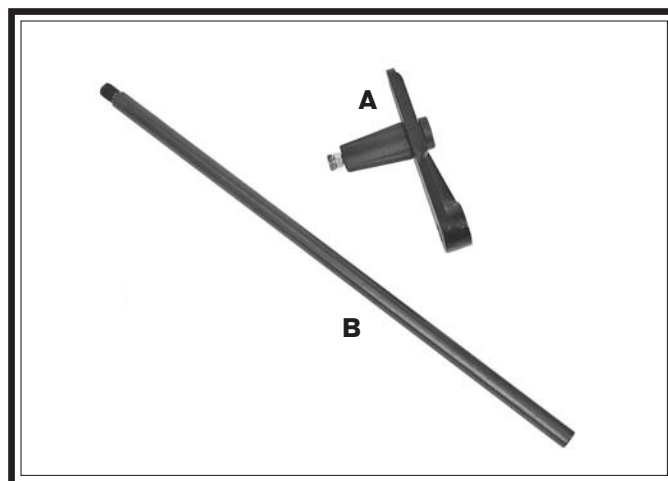
**Unpacking**

This item was carefully packaged to prevent damage during transport. If you discover any damage, please immediately call Customer Service at (360) 734-1540 for advice. You may need to file a freight claim, so save the containers and all packing materials for possible inspection by the carrier or its agent.

**Inventory**

The items listed below are optional components and are not required for bandsaw operations.

Description	Qty
A. Work Stop.....	1
B. Work Stop Rod	



**Figure 4. Inventory.**

## Cleaning & Protecting

The unpainted surfaces are coated at the factory with a heavy-duty rust preventative that prevents corrosion during shipment and storage. The benefit of this rust preventative is that it works very well. The downside is that it can be time-consuming to thoroughly remove.

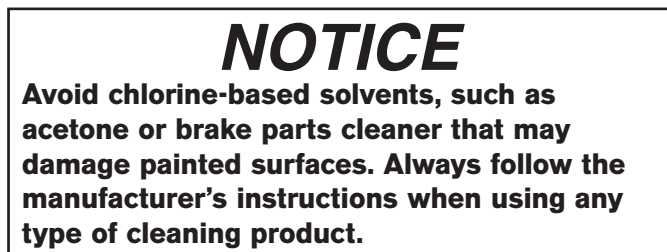
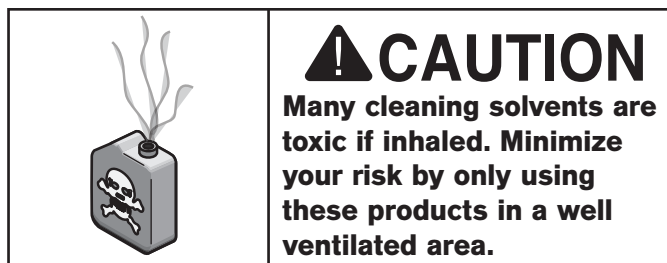
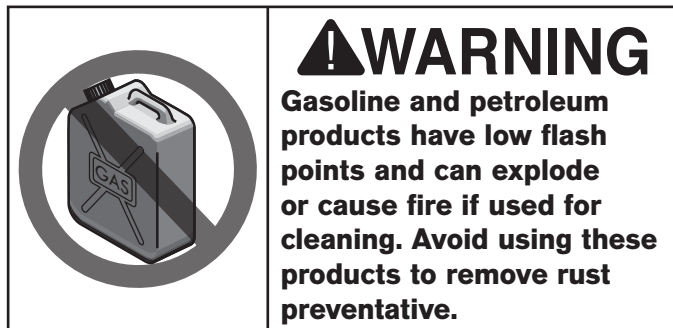
Be patient and do a careful job when cleaning and removing the rust preventative. The time you spend doing this will reward you with smooth-sliding parts and a better appreciation for the proper care of the unpainted surfaces.

Although there are many ways to successfully remove the rust preventative, we have cleaned thousands of machines and found the following process to be the best balance between efficiency and minimized exposure to toxic fumes or chemicals.

### Before cleaning, gather the following:

- Disposable rags
- Cleaner/degreaser (certain citrus-based degreasers work extremely well and they have non-toxic fumes)
- Safety glasses & disposable gloves

**Note:** Automotive degreasers, mineral spirits, or WD•40 can be used to remove rust preventative. Before using these products, though, test them on an inconspicuous area of a painted area to make sure they will not damage it.



### Basic steps for removing rust preventative:

1. Put on safety glasses and disposable gloves.
2. Coat all surfaces that have rust preventative with a liberal amount of your cleaner or degreaser and let them soak for a few minutes.
3. Wipe off the surfaces. If your cleaner or degreaser is effective, the rust preventative will wipe off easily.

**Note:** To clean off thick coats of rust preventative on flat surfaces, such as beds or tables, use a PLASTIC paint scraper to scrape off the majority of the coating before wiping it off with your rag. (Do not use a metal scraper or it may scratch the surface.)

4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant or light oil to prevent rust.

## Location

### Physical Environment

The physical environment where your machine is operated is important for safe operation and longevity of parts. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous or flammable chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature is outside the range of 41°–104°F; the relative humidity is outside the range of 20–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

### Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave access to a means of disconnecting the power source or engaging a lockout/tagout device.

### Lighting

Lighting around the machine must be adequate enough that operations can be performed safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.

### Weight Load

Refer to the **Machine Specifications** for the weight of your machine. Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

### Space Allocation

Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual.

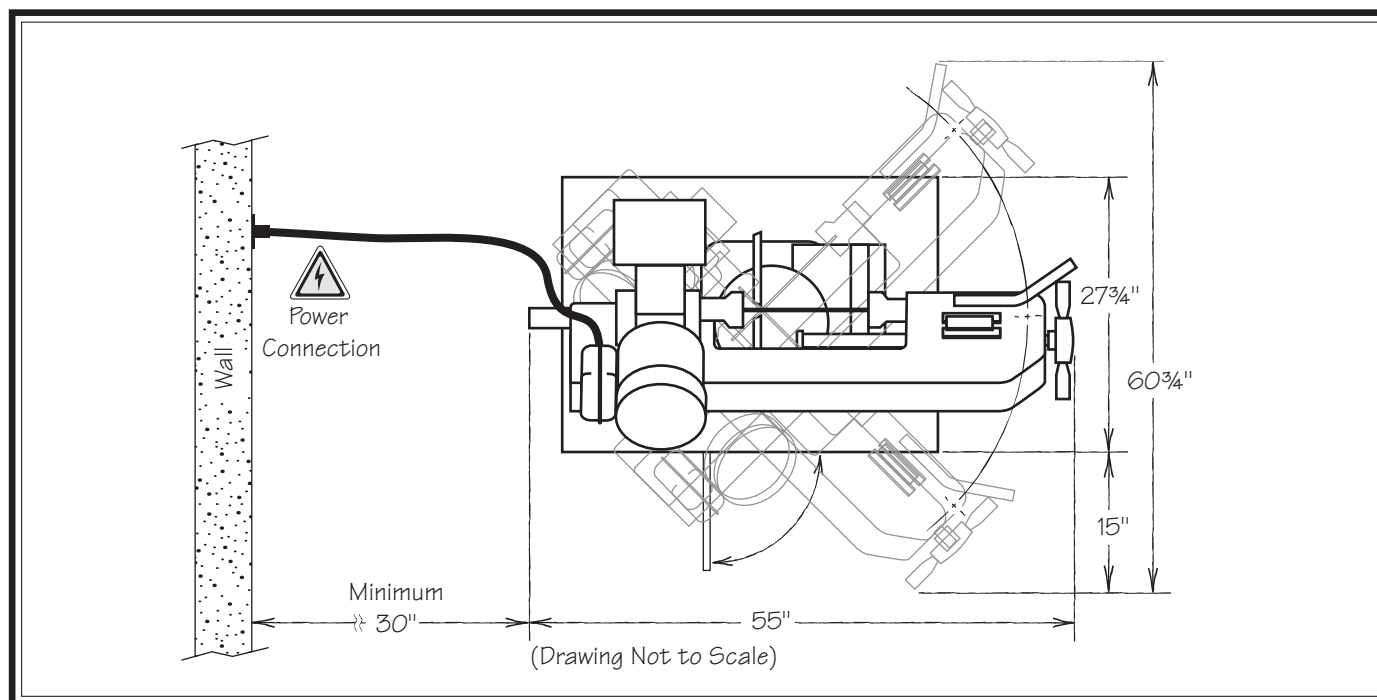
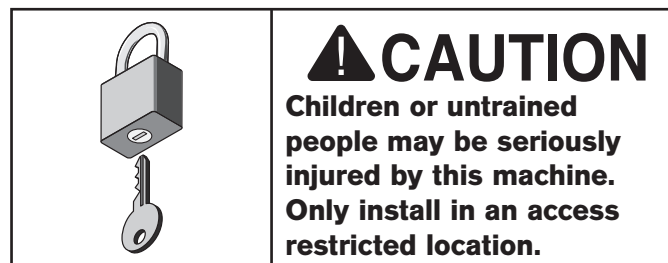
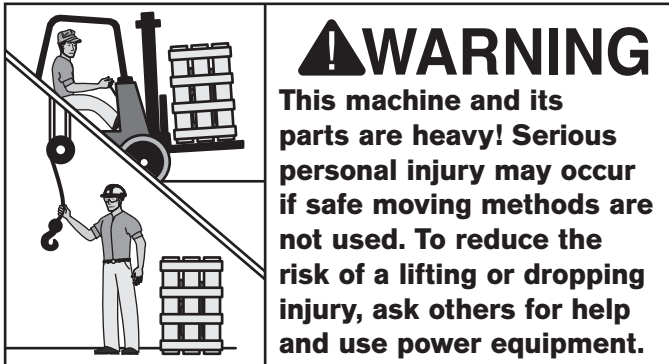
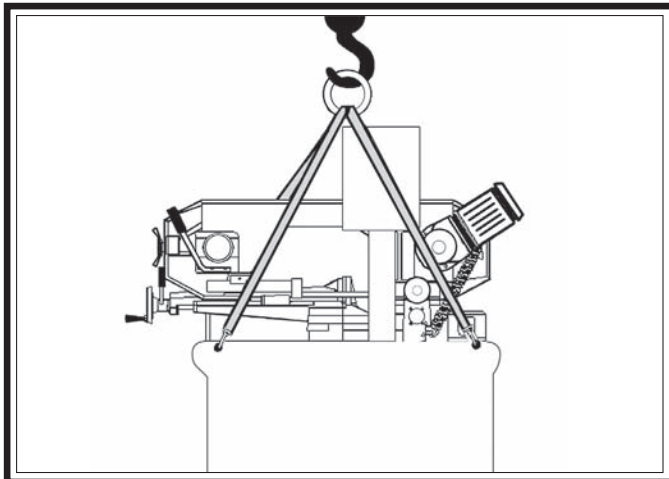


Figure 5. Clearances.

## Lifting & Moving



Unbolt the machine from its pallet, then insert two round steel bars through the lifting holes in the machine base. Attach lifting straps and hooks to the bars as shown in **Figure 6**. Lift the machine just high enough to clear the pallet, then move it to its final location. Have an assistant stabilize the machine while moving.



**Figure 6. Lifting location.**

## Leveling & Mounting

Generally, you can either bolt your machine to the floor or mount it on machine mounts. Although not required, we recommend that you secure the machine to the floor and level it while doing so. Because this is an optional step and floor materials may vary, hardware for securing the machine to the floor is not included.

### **NOTICE**

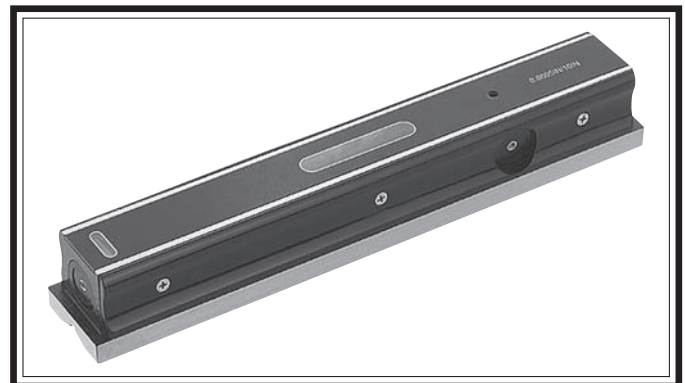
**We strongly recommend securing your machine to the floor if it is hardwired to the power source. Consult with your electrician to ensure compliance with local codes.**

### Leveling

Leveling machinery helps precision components, such as bed ways, remain straight and flat during the lifespan of the machine. Components on an unlevelled machine may slowly twist due to the dynamic loads placed on the machine during operation.

For best results, use a precision level that is at least 12" long and sensitive enough to show a distinct movement when a 0.003" shim (approximately the thickness of one sheet of standard newspaper) is placed under one end of the level.

See the figure below for an example of a high precision level.

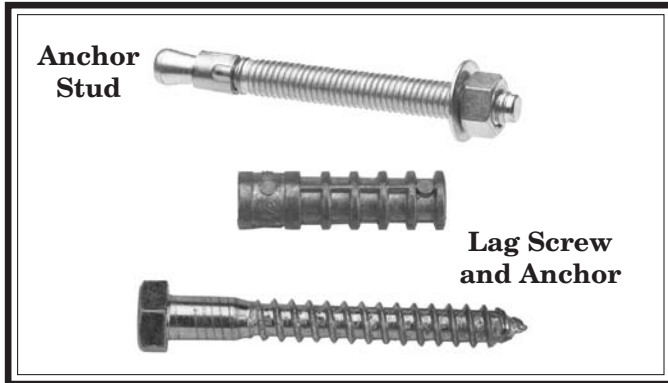


**Figure 7. Example of a precision level.**



## Bolting to Concrete Floors

Lag screws and anchors, or anchor studs (**below**), are two popular methods for securing machinery to a concrete floor. We suggest you research the many options and methods for securing your machine and choose the best one for your specific application.



**Figure 8. Common types of fasteners for bolting machinery to concrete floors.**

## Machine Mounts

Machine mounts are rubber pads mounted to a threaded stud, which can be fastened to the bottom of the machine.

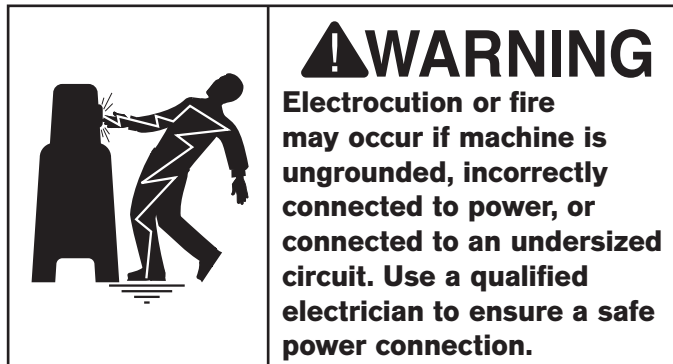
Machine mounts offer certain advantages such as ease of installation, vibration dampening, and easy leveling. They also make it easier to relocate the machine later on.

The disadvantage of machine mounts is that the machine can shift or move over time. For this reason, electrical codes may limit their use if the machine is hardwired to the power source. Also, mounts may reduce the total surface area of machine-to-floor contact, depending on the design of the machine.



**Figure 9. Typical machine mount.**

## Power Connection



Once your machine is set up and assembled as previously described in this manual, it is ready to be connected to the power source.

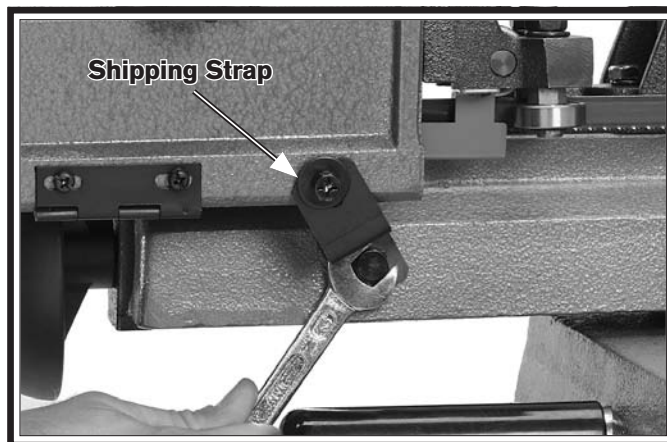
- If you plan to use the machine at 110V, simply plug it into a receptacle on a 110V circuit that meets the requirements listed on **Page 10**.
- If you plan to use the machine at 220V, you will have to convert the machine for 220V. Refer to **Electrical**, beginning on **Page 42**.

## Machine Setup

To ensure that your bandsaw arrives without damage to the hinge system, a shipping strap was installed. After removing the shipping strap, you may choose to install the work stop.

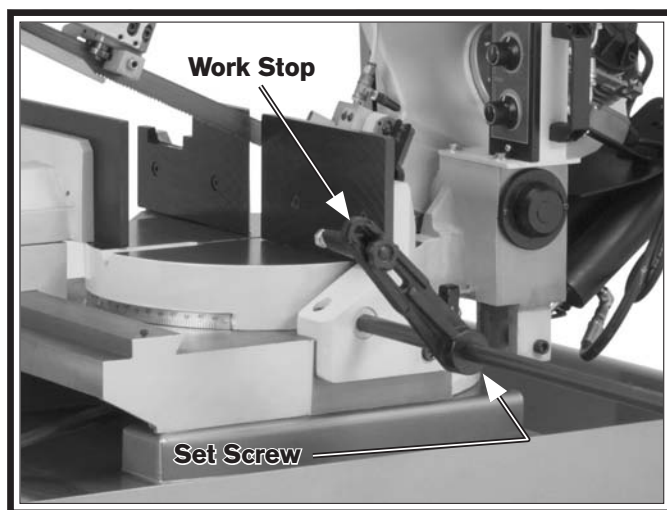
### To set up the machine:

1. Remove the shipping strap hex bolt and strap as shown in **Figure 10**. Keep this shipping strap in case you transport or ship the bandsaw in the future.



**Figure 10. Removing a shipping strap.**

2. Thread the work stop rod into the vise base.
3. Slide the work stop onto the work stop rod, position it as necessary, then tighten the set screw shown in **Figure 11**.



**Figure 11. Installing work stop.**

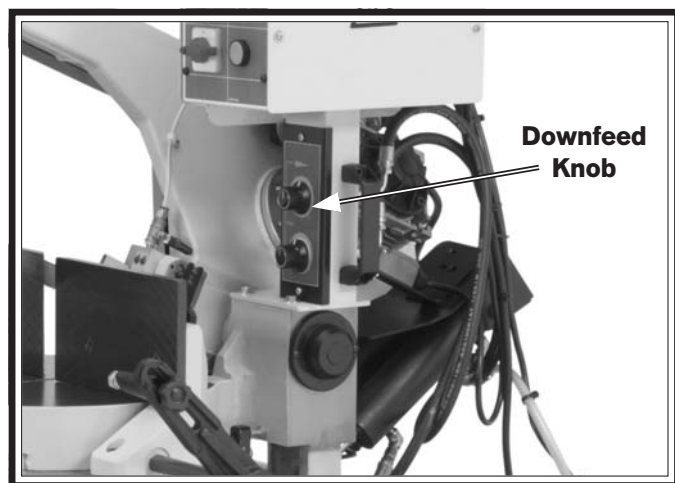
## Test Run

After all preparation steps have been completed, the machine and its safety features must be tested to ensure correct operation. If you discover a problem with the operation of the machine or its safety components, do not operate it further until you have resolved the problem.

**Note:** Refer to **Troubleshooting** on **Page 34** for solutions to common problems that may occur with metal-cutting bandsaws. If you need additional help, contact our Tech Support at (360) 734-1540.

### To test run your machine:

1. Read and follow the safety instructions at the beginning of the manual, take the required safety precautions, and make sure the machine is set up properly.
2. Clear away all tools and objects used during assembly and preparation.
3. Open the downfeed knob (see **Figure 12**) and allow the headstock to travel all the way down. If the blade contacts the machine base, adjust the downfeed stop bolt as described in **Downfeed Stop Bolt**, on **Page 39**.



**Figure 12. Downfeed valve location.**

4. Put on safety glasses and secure loose clothing or long hair.
5. Lift the headstock to the raised position, then close the downfeed knob to prevent it from lowering.
6. Start the bandsaw, but keeping your finger near the emergency stop button at all times during the test run. The bandsaw should run smoothly with little or no vibration.
  - If you suspect any problems, immediately turn the bandsaw **OFF**, disconnect it from power, and correct the problem before continuing.
  - If you need any help with your bandsaw call our Tech Support at (360) 734-1540.
7. Open the downfeed knob to lower the saw through its full range of motion. When it reaches the bottom of its travel, it should turn **OFF**.
  - If it does, Congratulations! The test run is complete.
  - If it does not, turn it **OFF**, disconnect it from power, then proceed immediately to **Limit Switches**, on **Page 38**.

## Inspections & Adjustments

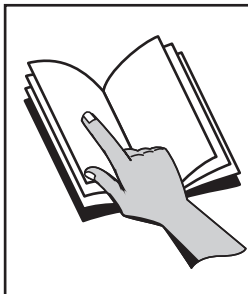
The following list of adjustments were performed at the factory before your machine was shipped. If you find that the adjustments are not set according to the procedures in this manual or your personal preferences, re-adjust them.

- Squaring Blade .....**Page 40**
- Blade Guides .....**Page 28**

## Operation Overview

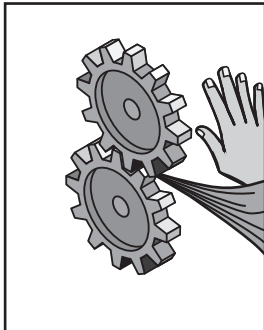
The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so they can more easily understand the controls discussed later in this manual.

**Note:** Due to the generic nature of this overview, it is not intended to be an instructional guide for performing actual machine operations. To learn more about specific operations and machining techniques, seek training from people experienced with this type of machine, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.



### **!WARNING**

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.



### **!WARNING**

Loose hair, clothing, or jewelry could get caught in machinery and cause serious personal injury. Keep these items away from moving parts at all times to reduce this risk.



### **!WARNING**

During operation, small metal chips may become airborne, leading to serious eye injury. Wear safety glasses to reduce this risk.

To complete a typical cutting operation, the operator does the following:

1. Examines the workpiece to make sure it is suitable for cutting.
2. Raises the headstock, then closes the downfeed valve.
3. Adjusts the headstock angle for the type of cut, then securely clamps the workpiece in the vise.
4. Adjusts the guide post to within 1" of the workpiece, and verifies that the blade is properly tensioned.
5. Adjusts the downfeed rate adjust knob for the correct feed rate.
6. Makes sure the workpiece and bandsaw are stable and that there are no obstructions in the way of the cut.
7. Puts on safety glasses.
8. Starts the bandsaw and waits for the blade to reach full speed.
9. Opens the downfeed valve to lower the head and blade into the workpiece, then allows the bandsaw to complete the cut.
10. Once the bandsaw has stopped, raises the head, and removes the workpieces.

## Description of Controls & Components

Refer to **Figures 13–15** and the following descriptions to become familiar with the basic controls and components used to operate this machine.

- A. Blade Tension Knob:** Applies or releases blade tension.
- B. Blade Tension Gauge:** Displays blade tension.
- C. Guide Post Lock Screw:** Locks the guide post in the position set by the operator.
- D. Control Panel:** Controls the electrical components of the machine.
- E. Downfeed Rate Adjust Knob:** Controls the speed at which the blade lowers into the cut.
- F. Downfeed Valve:** Controls the starting and stopping of the headstock downfeed.
- G. Work Stop:** An adjustable stop for cutting multiple workpieces at the same length.
- H. Vise Slide Lock Lever:** Locks the vise in the position set by the operator.
- I. Swivel Lock Handle:** Locks the headstock in the position set by the operator.
- J. Vise Handwheel:** Controls the vise jaw movement.
- K. Headstock Handle:** Serves as a lift-point for the headstock.
- L. Vise Jaw Quick Release Lever:** Releases the vise leadscrew so the vise can quickly open or close without the use of the handwheel.
- M. Indicator Lamp:** Lights when the saw is *ON*.
- N. Variable Blade Speed Knob:** Adjusts the blade speed.
- O. ON Button:** Starts the saw and coolant pump.

- P. Main Power Switch:** Turns the saw *ON/OFF*.
- Q. Emergency Stop Button:** Cuts power to the motor.

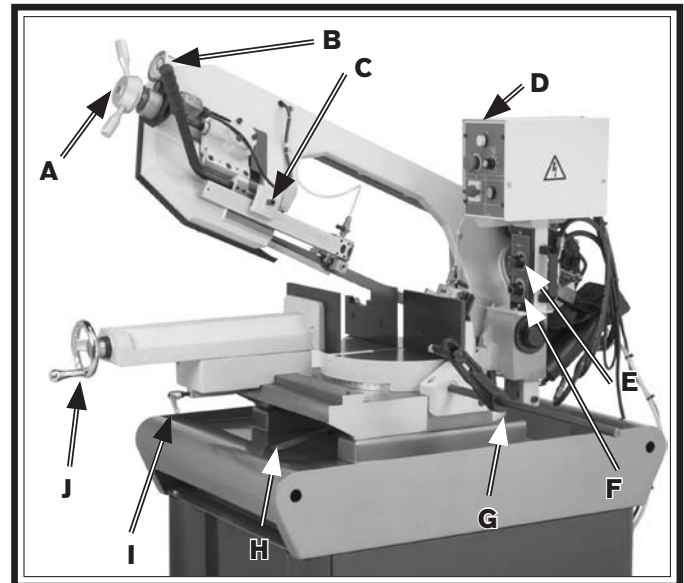


Figure 13. Controls and components (front).

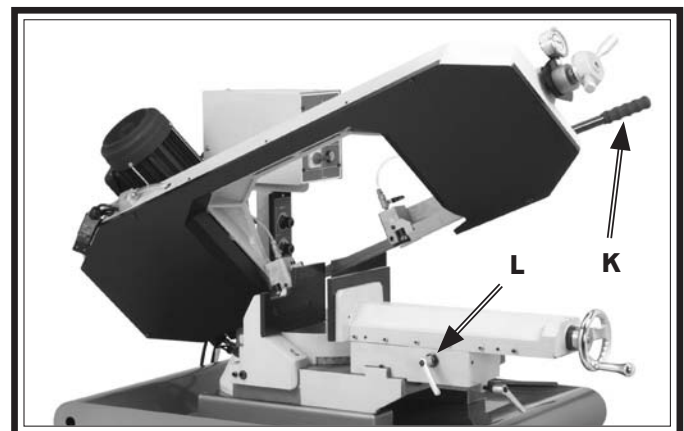


Figure 14. Controls and components (rear).

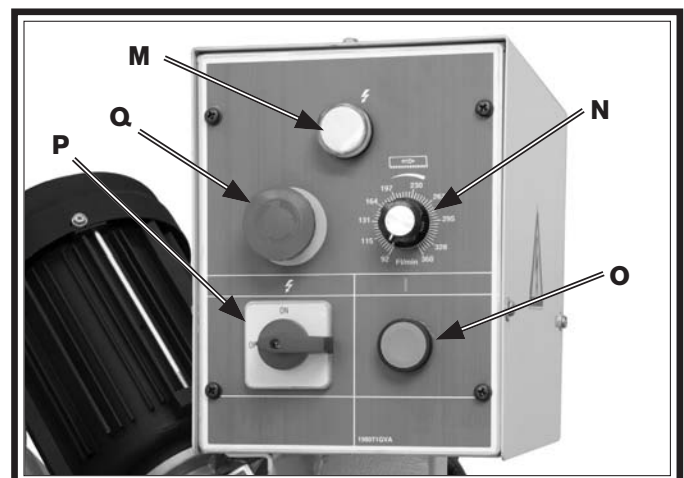


Figure 15. Control panel.

## Blade Selection

Selecting the right blade for the cut requires a knowledge of various blade characteristics. This section breaks down blade characteristics to help the reader make an informed decision about what blade to use for a given operation.

### Blade Terminology

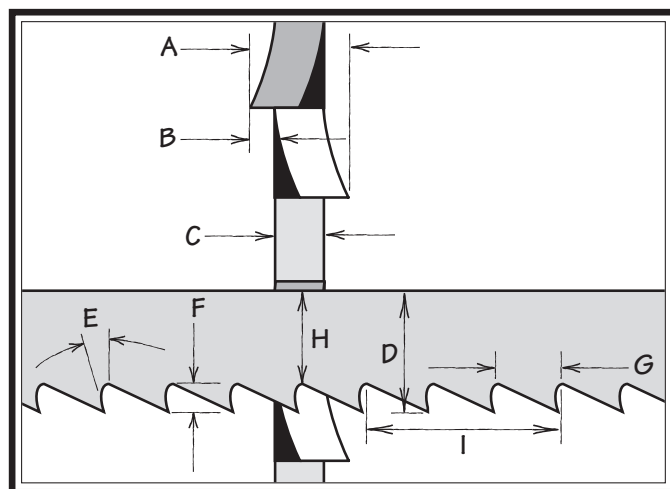


Figure 16. Bandsaw blade terminology.

- A. Kerf:** The width of the cut made during operation.
- B. Tooth Set:** The distance each tooth is bent left or right from the blade.
- C. Gauge:** The thickness of the blade.
- D. Blade Width:** The widest point of the blade measured from the tip of the tooth to the back edge of the blade.

- E. Tooth Rake:** The angle of the tooth face from a line perpendicular to the length of the blade.
- F. Gullet Depth:** The distance from the tooth tip to the bottom of the curved area (gullet).
- G. Tooth Pitch:** The distance between tooth tips.
- H. Blade Back:** The distance between the bottom of the gullet and the back edge of the blade.
- I. Blade Pitch or TPI:** The number of teeth per inch measured from gullet to gullet.

### Blade Length

Measured by the blade circumference, blade lengths are usually unique to the brand of your bandsaw and the distance between the wheels.

Model	Blade Length
SB1020.....	108¼"

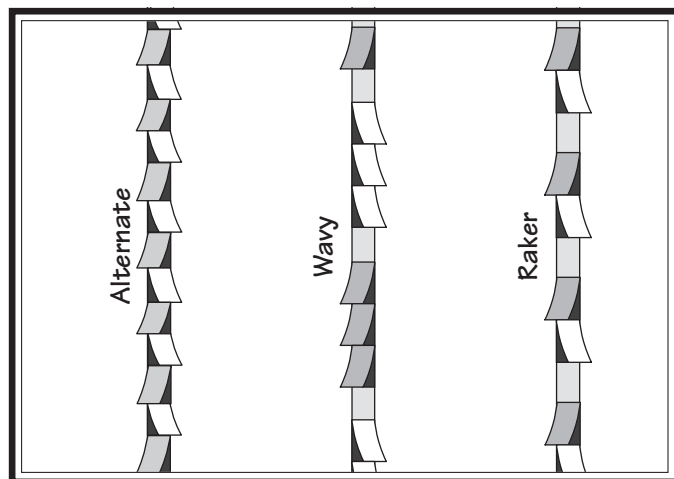
### Blade Width

Measured from the back of the blade to the tip of the blade tooth (the widest point), blade width is often the first consideration given to blade selection. Blade width dictates the largest and smallest curve that can be cut, as well as how accurately it can cut a straight line—generally the wider the blade, the straighter it will cut.

Model	Blade Width
SB1020.....	1½"

## Tooth Set

Three common tooth sets are alternate, wavy, and raker (see **Figure 17**). Each removes material in a different manner to make the kerf in the workpiece.



**Figure 17. Bandsaw blade tooth sets.**

**Alternate:** An all-purpose arrangement with teeth bent evenly left and right of the blade. Generally used for milder metals.

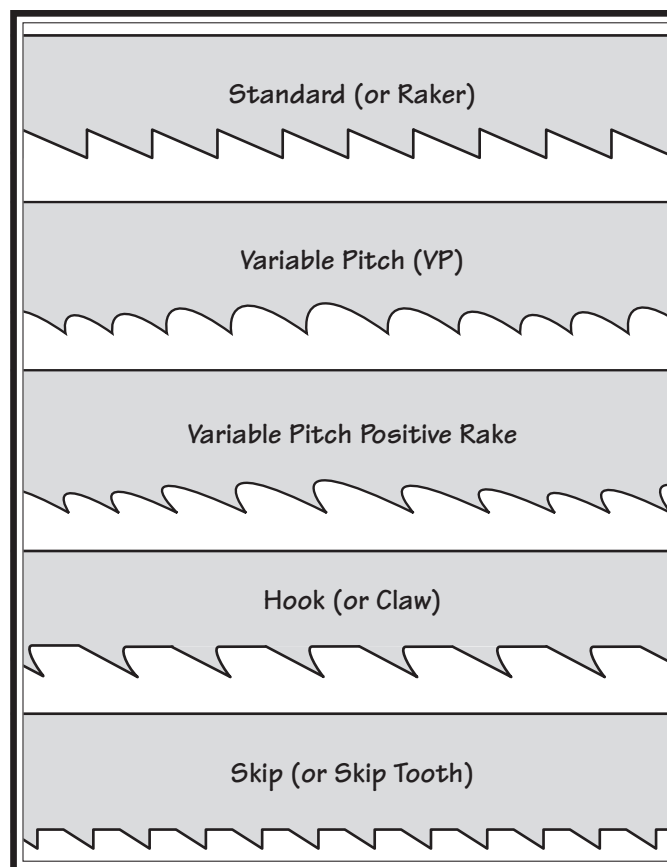
**Wavy:** Generally three or more teeth in a group that are bent one way, followed by a non-set tooth, and then a group bent the other way. Recommended for straight cuts in thin metals or thin-wall tubing.

**Raker:** Three teeth in a recurring group—one bent left, next one bent right, and then a non-set tooth. The raker set is ideal for most contour cuts.

## Tooth Type

The most common tooth types are described below and illustrated in **Figure 18**. Each removes, gathers, and expels material differently.

**Standard or Raker:** Equally spaced teeth set at a "0" rake angle. Recommended for all purpose use.



**Figure 18. Bandsaw blade tooth types.**

**Variable Pitch (VP):** Varying gullet depth and tooth spacing, a "0" rake angle, excellent chip removing capacity, and smooth cutting.

**Variable Pitch with Positive Rake:** Varying gullet depth and tooth spacing, a positive rake angle, better chip formation, and aggressive cutting.

**Hook or Claw:** Wide gullets (round or flat), equally spaced teeth, positive rake angle, and fast cut with good surface finish.

**Skip or Skip Tooth:** Wide, flat gullets, a "0" rake angle, equally spaced teeth, and recommended for non-ferrous materials.

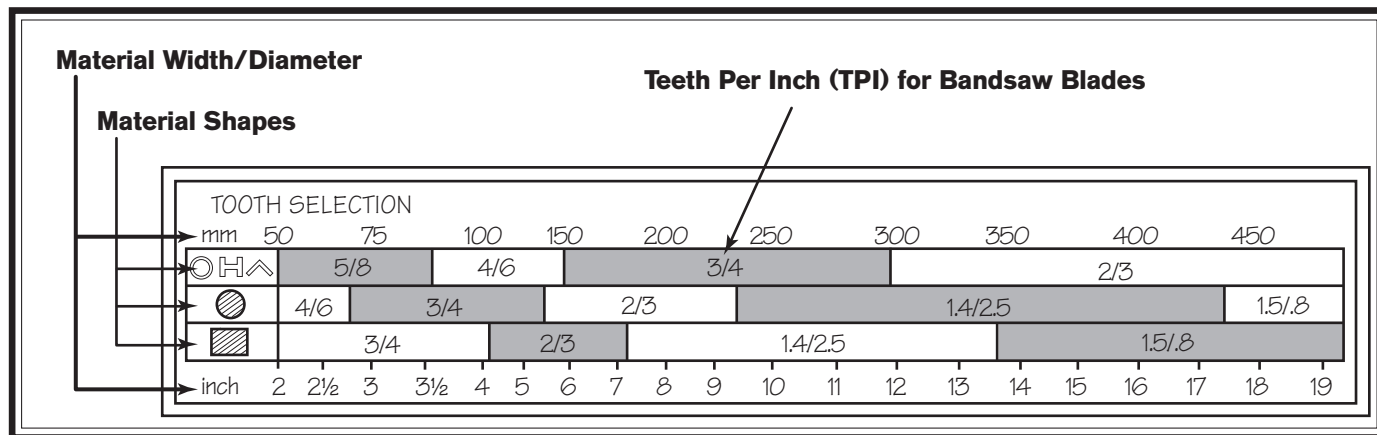
### Blade Pitch (TPI)

The chart below is a basic starting point for choosing teeth per inch (TPI) for variable pitch blades and standard raker set bi-metal blades/HSS blades. However, for exact specifications of bandsaw blades that are correct for your operation, contact the blade manufacturer.

#### To select the correct blade pitch:

1. Measure the material thickness. This measurement is the distance from where each tooth enters the workpiece to where it exits the workpiece.
2. Refer to the "Material Width/Diameter" row of the blade selection chart in **Figure 19**, and read across to find the workpiece thickness you need to cut.

3. Refer to the "Material Shapes" row and find the shape of the material to be cut.
4. In the applicable row, read across to the right and find the box where the row and column intersect. Listed in the box is the minimum TPI recommended for the variable tooth pitch blades.
5. The "Cutting Speed Rate Recommendation" section of the chart offers guidelines for various metals, given in feet per minute (FPM). Choose the speed closest to the number shown in the chart.



**Figure 19. General guidelines for blade selection and speed chart.**



## Blade Changes

Change blades when they become dull, damaged, or if the operation requires a different type of blade.

### To change the blade on the bandsaw:

1. DISCONNECT BANDSAW FROM POWER!
2. Raise the head of the bandsaw, then remove the blade cover.
3. Loosen the tension knob and slip the blade off of the wheels.
4. Install the new blade through both blade guides, as shown in **Figure 20**, and around the bottom wheel.

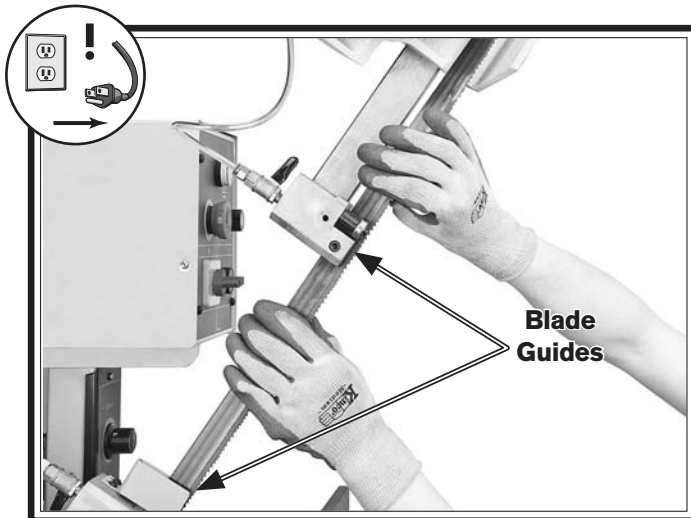


Figure 20. Typical blade installation.

5. Hold the blade around the bottom wheel with one hand and slip it around the top wheel with the other hand, keeping the blade between the blade guides.

**Note:** It is sometimes possible to flip the blade inside out, in which case the blade will be installed in the wrong direction. Check to make sure the blade teeth are facing toward the workpiece, as shown in **Figure 21**, after installing it on the bandsaw. Some blades will have a directional arrow you can use as a guide.

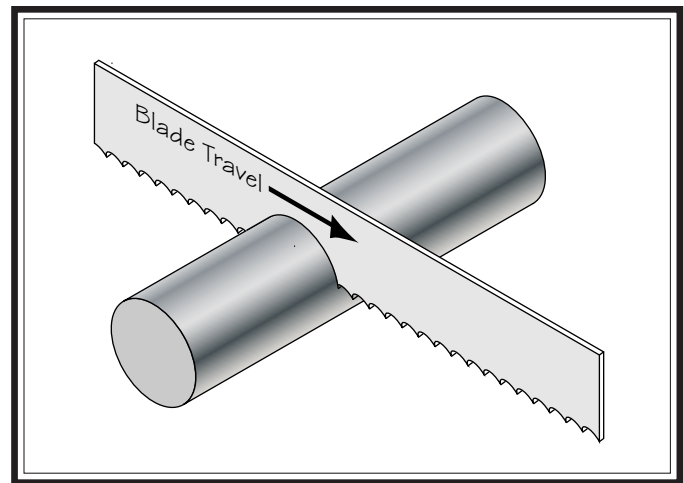


Figure 21. Blade cutting direction.

6. When the blade is around both wheels, adjust the position so the back of the blade is against the wheel shoulder, as shown in **Figure 22**.



Figure 22. Typical blade/wheel position.

7. Tighten the tension knob so the blade will not slip on the wheels upon startup.
8. Connect the bandsaw to the power source.
9. Briefly turn the bandsaw **ON** then **OFF** to position the blade and resume the previous tracking. Proceed to **Blade Tension** on **Page 24**.

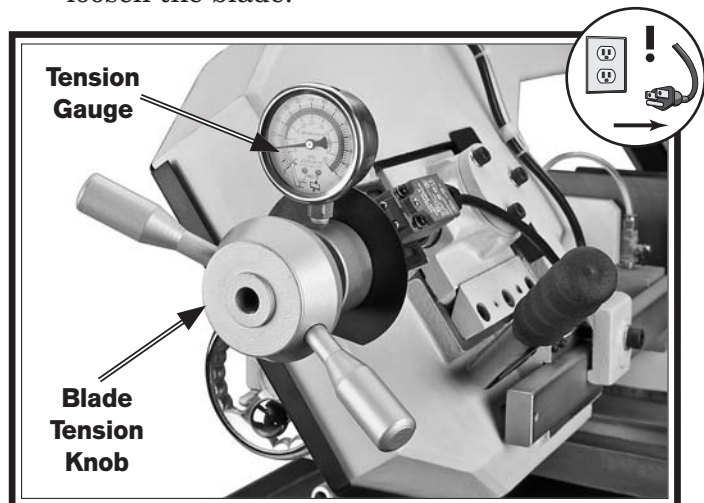
## Blade Tension

Proper blade tension is essential to avoid blade vibration, twist, or slippage on the wheels. A correctly tensioned blade provides long life, straight cuts, and efficient cutting times.

The three major signs of incorrect blade tension are: 1) The blade stalls in the cut and slips on the wheels, 2) the blade frequently breaks, and 3) the bandsaw does not make straight cuts.

### To tension the blade on the bandsaw:

1. Make sure the blade is tracking properly.
2. DISCONNECT BANDSAW FROM POWER!
3. Loosen and slide the blade guide as far out as it will go, then tighten it down again.
4. Turn the tension knob in **Figure 23** clockwise to tighten the blade or clockwise to loosen the blade.



**Figure 23. Adjusting blade tension.**

5. Tighten the blade until the tension gauge moves into the green section.

## Blade Breakage

Many conditions may cause a bandsaw blade to break. Some of these conditions are unavoidable and are the natural result of the stresses placed on the bandsaw; other causes of blade breakage are avoidable.

### The most common causes of avoidable blade breakage are:

- Faulty alignment or adjustment of the blade guides.
- Forcing or twisting a wide blade around a tight radius.
- Feeding the workpiece too fast.
- Dull or damaged teeth.
- Over-tensioned blade.
- Top blade guide assembly set too high above the workpiece. Adjust the top blade guide assembly so that there is approximately  $\frac{1}{8}$ "– $\frac{1}{4}$ " between the bottom of the assembly and the workpiece. Understand that with smaller workpieces, this may not be possible. In these cases, simply adjust the blade guide as far down as possible.
- Using a blade with a lumpy or improperly finished braze or weld.
- Continuously running the bandsaw when not in use.
- Leaving the blade tensioned when not in use.
- Using the wrong blade pitch (TPI) for the workpiece thickness. The general rule of thumb is to have no fewer than three teeth in contact with the workpiece when starting a cut and at all times during cutting.

## Blade Care & Break-In Downfeed Rate

### Blade Care

To prolong blade life, always use a blade with the proper width, set, type, and pitch for each application. Maintain the appropriate feed rate, feed pressure, and blade speed and pay attention to the chip characteristics (Refer to the **Chip Inspection Chart** on **Page 26**). Keep your blades clean, since dirty or gummed up blades pass through the cutting material with much more resistance than clean blades, causing unnecessary heat.

### Blade Break-In

The tips and edges of a new blade are extremely sharp. Cutting at too fast of a feed rate or too slow of a blade speed can fracture these tips and edges, quickly dulling the blade. Properly breaking-in a blade allows these sharp edges to wear without fracturing, thus keeping the blade sharp longer. Below is a typical break-in procedure. For aftermarket blades, refer to the manufacturer's break-in procedure to keep from voiding the warranty.

Use the **Chip Inspection Chart** on **Page 26** as a guide to evaluate the chips and ensure that the optimal blade speed and feed rate are being used.

#### To properly break-in a new blade:

1. Choose the correct speed for the blade and material of the operation.
2. Reduce the feed pressure by half for the first 50–100 in<sup>2</sup> of material cut.
3. To avoid twisting the blade when cutting, adjust the feed pressure when the total width of the blade is in the cut.

Start and stop downfeed with the downfeed knob. The downfeed rate is adjusted by turning the downfeed rate adjust knob (**Figure 24**). Turning the knob clockwise decreases the downfeed rate and turning the knob counterclockwise increases the downfeed rate.

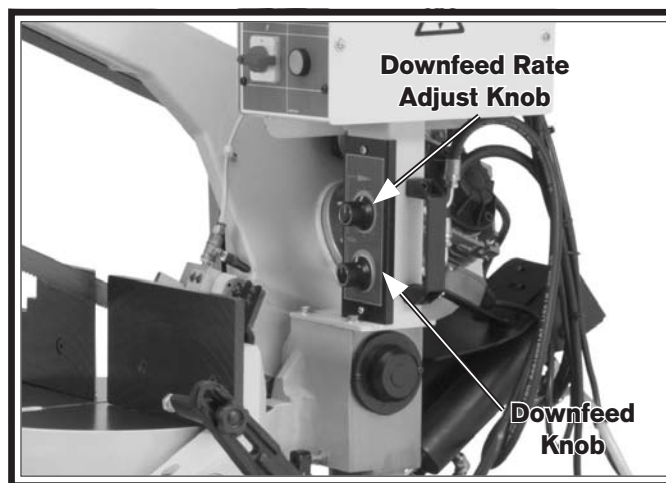


Figure 24. Downfeed pressure adjustment.

## Downfeed Pressure

The downfeed pressure is controlled by the spring shown in **Figure 25**.

To decrease downfeed pressure, turn the cap screw clockwise to increase spring tension.

To increase downfeed pressure, turn the cap screw counterclockwise to release spring tension.

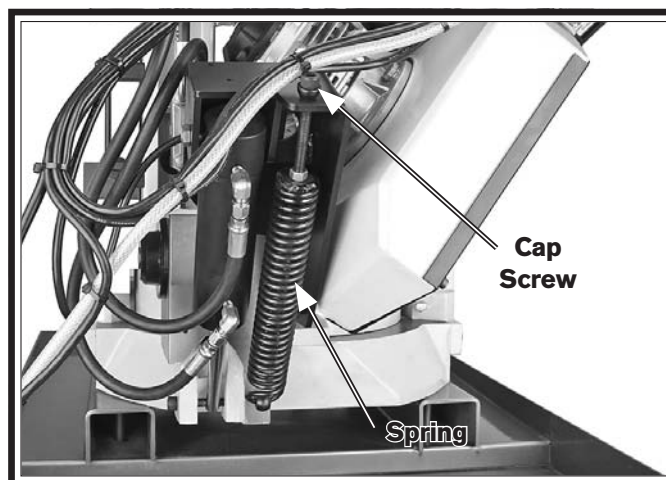


Figure 25. Downfeed rate adjustment.

## Blade Speed Chart




The chart in **Figure 26** offers blade speed guidelines for various metals, given in feet per minute (FPM) and meters per minute (M/Min). Choose the closest available speed on the machine, then adjust the feed rate as necessary, using the appearance of the chips produced as a guide. Refer to the **Chip Inspection Chart** that follows for recommendations on adjusting feed rate or blade speed based on the appearance of the chips produced.

Material	Speed FPM (M/Min)	Material	Speed FPM (M/Min)	Material	Speed FPM (M/Min)	Material	Speed FPM (M/Min)
Carbon Steel	196~354 (60) (108)	Tool Steel	203 (62)	Alloy Steel	111~321 (34) (98)	Free Machining Stainless Steel	150~203 (46) (62)
Angle Steel	180~220 (54) (67)	High-Speed Tool Steel	75~118 (25) (36)	Mold Steel	246 (75)	Gray Cast Iron	108~225 (33) (75)
Thin Tube	180~220 (54) (67)	Cold-Work Tool Steel	95~213 (29) (65)	Water Hardened Tool Steel	242 (75)	Ductile Austenitic Cast Iron	65~85 (20) (26)
Aluminum Alloy	220~534 (67) (163)	Hot-Work Tool Steel	203 (62)	Stainless Steel	85 (26)	Malleable Cast Iron	321 (98)
Copper Alloy	229~482 (70) (147)	Oil-Hardened Tool Steel	203~213 (62) (65)	CR Stainless Steel	85-203 (26) (62)	Plastics	220 (67)

**Figure 26. Dry cutting blade speed chart.**

## Chip Inspection Chart

The best method for choosing the cutting speed and feed rate for a cutting operation is to inspect the chips created by the cut. These chips are indicators of what is commonly referred to as the "chip load." Refer to the chip inspection chart below to evaluate chip characteristics and determine whether to adjust feed rate/pressure, blade speed, or both.

Chip Appearance	Chip Description	Chip Color	Blade Speed	Feed Rate/ Pressure	Other Actions
	Thin & Curled	Silver	Good	Good	
	Hard, Thick & Short	Brown or Blue	Increase	Decrease	
	Hard, Strong & Thick	Brown or Blue	Increase	Decrease	
	Hard, Strong, Curled & Thick	Silver or Light Brown	Good	Decrease Slightly	Check Blade Pitch
	Hard, Coiled & Thin	Silver	Increase	Decrease	Check Blade Pitch
	Straight & Thin	Silver	Good	Increase	
	Powdery	Silver	Decrease	Increase	
	Coiled, Tight & Thin	Silver	Good	Decrease	Check Blade Pitch

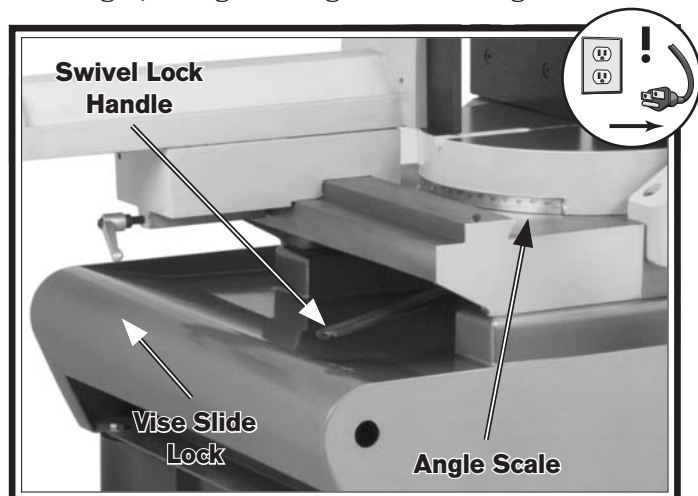
**Figure 27. Chip inspection chart.**

## Angle Cuts

The headstock can be swiveled to cut angles from 0–60° to the left and 0–45° to the right for a total swing of 105°. When making cuts to the right, the vise should remain in the left-most position. If you need to make a cut to the left, you will have to move the vise to the right side of the machine.

### Cuts to the Right

1. DISCONNECT BANDSAW FROM POWER!
2. Loosen the lock handle shown in **Figure 28**, then swivel the headstock to the desired angle, using the angle scale as a guide.



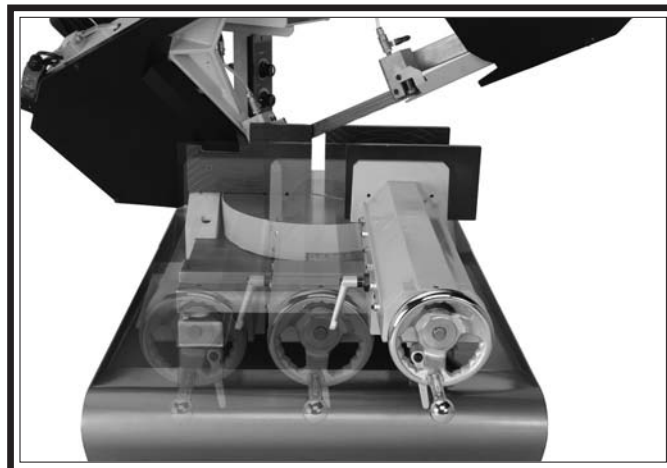
**Figure 28. Swivel base.**

3. Move the saw through its full range of motion to make sure the blade will not contact the vise during operation, then tighten the swivel lock handle.

### Cuts to the Left

1. DISCONNECT BANDSAW FROM POWER!
2. Lift the headstock to the upmost position, then close the downfeed valve to prevent it from lowering.

3. Loosen the vise slide lock (see **Figure 28**).
4. Slide the vise to the right until it stops.

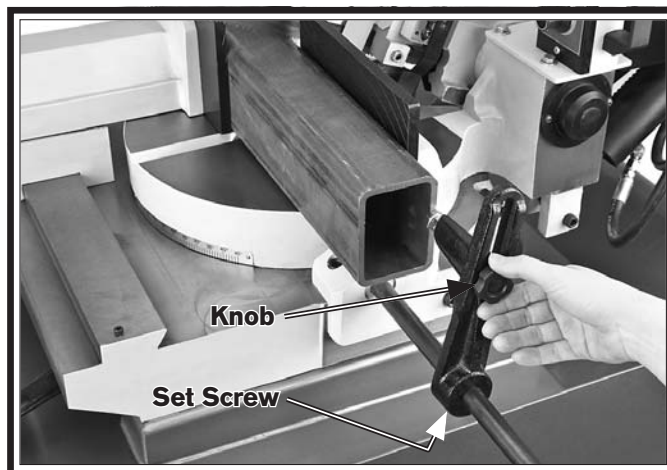


**Figure 29. Moving vise.**

5. Move the saw through its full range of motion to make sure the blade will not contact the vise during operation, then tighten the swivel lock handle.

## Work Stop

The Model SB1020 is equipped with a work stop that can be used to quickly position the workpiece during a repetitive cutting operation. Adjust the work stop as needed, then tighten the set screw and knob to lock it in place, as shown in **Figure 30**.



**Figure 30. Work stop.**

## Blade Guide

The upper blade guide should be adjusted to approximately  $\frac{1}{4}$ " away from the workpiece. The support provided by having the blade guide close to the workpiece ensures straight cuts and reduces blade tendency to twist or drift.

### To adjust the blade guide:

1. DISCONNECT BANDSAW FROM POWER!
2. Loosen the cap screw in **Figure 31** and slide the blade guide to approximately  $\frac{1}{4}$ " away from the workpiece, then re-tighten the cap screw.

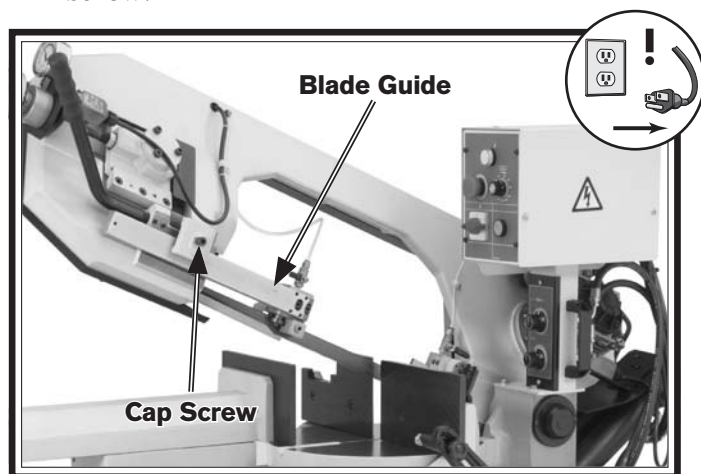


Figure 31. Blade guides.

## Vise Quick Release

The Model SB1020 has a vise quick release handle that allows the operator to quickly adjust the opening of the jaws without the use of the handwheel. Rotate the handle clockwise to disengage the vise leadscrew, then slide the vise open or closed as needed. To re-engage the leadscrew, release the vise quick release handle.

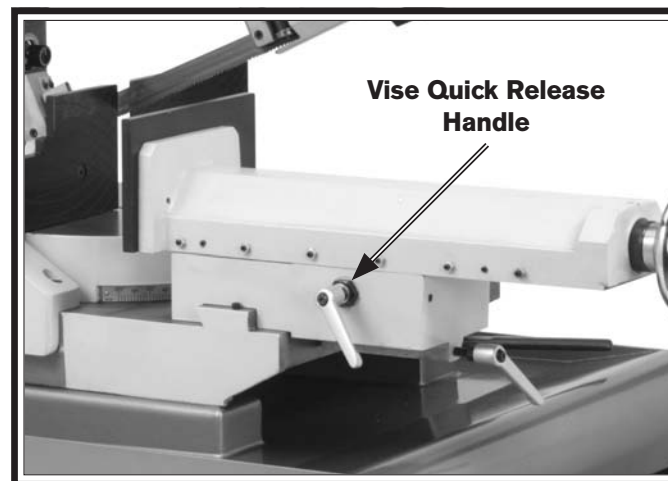


Figure 32. Vise quick release handle.

## Workpiece Holding

Figure 33 shows the correct methods for holding different workpiece shapes.

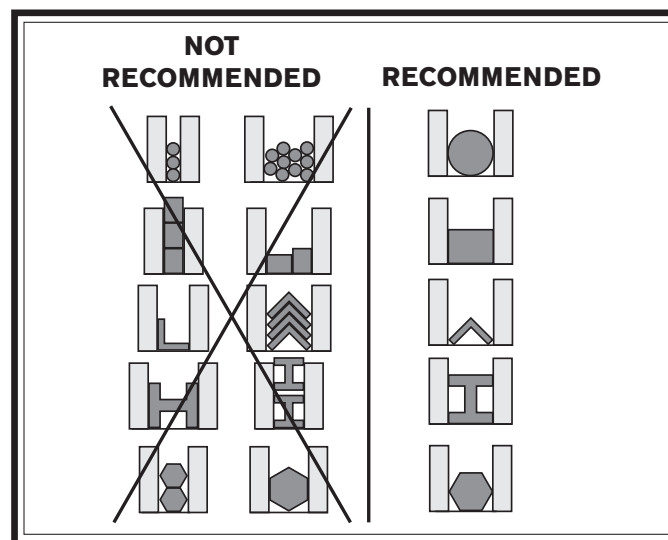


Figure 33. Workholding options by material shape.

## Cutting Fluid

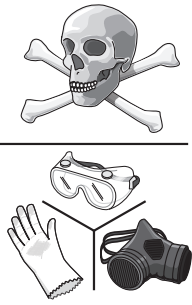
While simple in concept and function, many issues must be taken into account to find and use the correct cutting fluid. Always follow all product warnings and contact the fluid manufacturer for unanswered questions.

Use the information below as a guideline to choose the appropriate cutting fluid. Always refer to the cutting fluid manufacturer for specific application and safety information:

- For cutting low alloy, low carbon, and general-purpose category metals with a bi-metal blade—use a water soluble cutting fluid.
- For cutting stainless steels, high carbon, and high alloy metals, brass, copper and mild steels—use "Neat Cutting Oil" (commonly undiluted mineral oils) that have extreme pressure additives (EP additives).
- For cutting cast iron, cutting fluid is not recommended.

**Remember:** Too much flow at the cutting fluid nozzles will make a mess and can make the work area unsafe; and not enough fluid at the cut will heat the blade, causing the blade teeth to load up and break.

**Tip:** Using a refractometer or hydrometer to replenish water in water-based coolant can extend the life of blades and coolant, and ensure consistent cutting results.

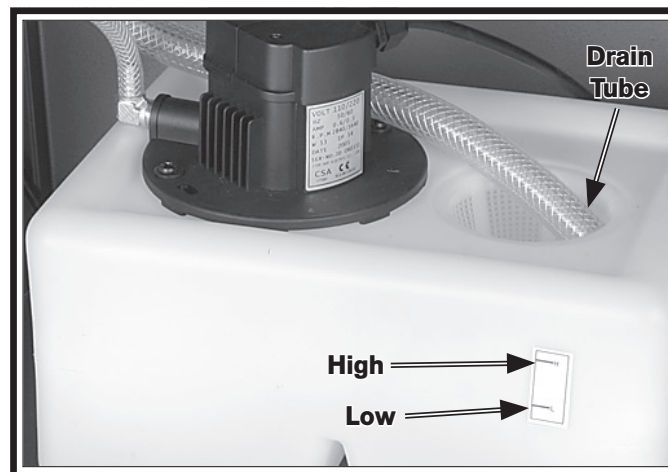
	<p><b>⚠️ WARNING</b>  <b>BIOLOGICAL AND POISON HAZARD!</b> Use proper personal protection equipment when handling cutting fluid and follow federal, state, and fluid manufacturer requirements to properly dispose of cutting fluid.</p>
---	--

## Cutting Fluid System

This bandsaw has a built-in cutting fluid system that extends the life of your bandsaw blades by lowering the temperature of the blade and workpiece and washing away chips.


### To use the cutting fluid system:

1. Thoroughly clean and remove any foreign material that may have fallen inside the reservoir during shipping.
2. Place the filter screen and drain tube in the reservoir as shown in **Figure 34**.

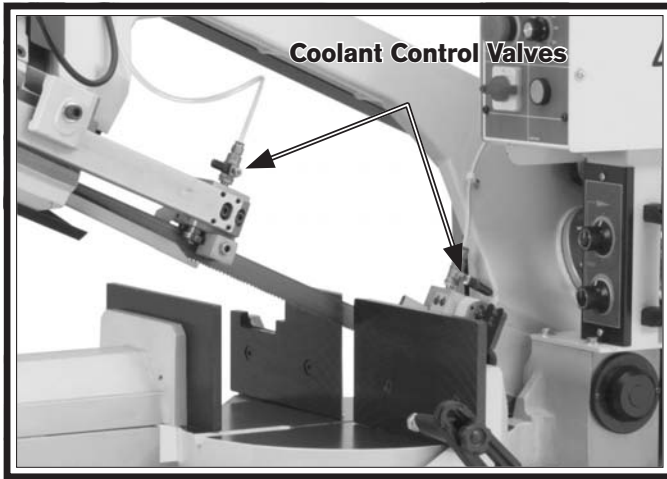


**Figure 34. Filter screen and hose.**

3. Fill the reservoir to the "high" mark with your chosen cutting fluid solution.

	<p><b>⚠️ WARNING</b>  <b>Magnesium fires are extremely dangerous!</b> When cutting magnesium, always use a cutting fluid intended for this type of metal and carefully follow the fluid manufacturer's recommendations.</p>
--	---

4. Adjust the valves on the coolant hoses to control the flow of coolant (see **Figure 35**). Make sure that the pressure is not so high that coolant spills on the floor and creates a slipping hazard.



**Figure 35. Coolant control valve.**

## ***NOTICE***

**Keep the tray chip screen clear so coolant can recycle to the pump reservoir. NEVER operate the pump with the reservoir below the low mark or you may over-heat the pump and void your warranty!**

## **Operation Tips**

Review the following tips to help you safely and effectively operate your bandsaw and get the maximum life out of your saw blades.

- Use the work stop to quickly and accurately cut multiple pieces of stock to the same length.
- Let the blade reach full speed before engaging the workpiece. Never start a cut with the blade in contact with the workpiece.
- Pay attention to the chips produced by the cutting operation and use their appearance to fine-tune the blade speed, feed speed, and pressure (refer to the **Chip Inspection Chart** on **Page 26**).
- Wait until the blade has completely stopped before removing the workpiece from the vise, and avoid touching the cut end—it could be very hot!

## ***NOTICE***

**Release blade tension at the end of each use to prolong blade life.**

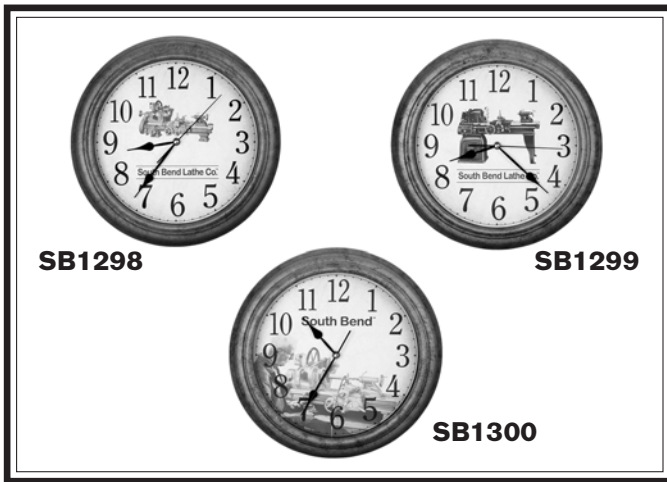


# Accessories

This South Bend merchandise may be available through your local South Bend Lathe Co. dealer. If you do not have a dealer in your area, please call us at (360) 734-1540 or email us at [cs@southbendlathe.com](mailto:cs@southbendlathe.com).

- SB1298—SBL Bench Lathe Shop Clock**
- SB1299—SBL Toolroom Lathe Shop Clock**
- SB1300—SBL Lathe with Man**

These fine traditional shop clocks are constructed with a metal antique-finished frame. They are easy to read from a distance and measure 14" in diameter. Pictures just don't do them justice. They are very nice quality clocks and perfect for the South Bend Lathe aficionado.



**Figure 36. Antique-finished South Bend shop clocks.**

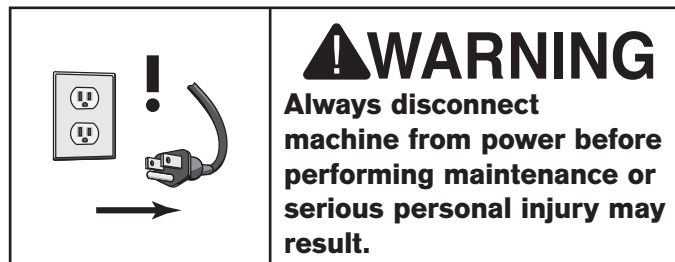
- SBL Gearhead T-Shirt**
- SBL One Good Turn T-Shirt**

100% Cotton, preshrunk T-shirts, available in sizes S, M, L, XL, 2XL, 3XL.



**Figure 37. Official South Bend Lathe T-Shirts.**

# Maintenance Schedule Lubrication



For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

## Daily

- Check/correct loose mounting bolts.
- Check/correct damaged or dull saw blade.
- Check/correct worn or damaged wires.
- Clean/protect table.
- Clean metal chips from upper and lower wheel areas, and empty the chip chute.
- Correct any other unsafe condition.

## Monthly

- Lubricate all components outlined in this section, with the exception of the gearbox.
- Monitor gearbox oil level by removing the fill plug and checking that the oil level is even with the fill hole (with headstock lowered)

## Yearly

- Lubricate gearbox.

## Cleaning

Use a brush and a shop vacuum to remove chips and other debris from the machine. Keep the non-painted surfaces rust-free with regular applications of a high quality rust preventative.

Periodically remove the blade and thoroughly clean all metal chips or built-up grease from the wheel surfaces and blade housing.

Before applying lubricant to any area, wipe the area clean to avoid contamination.

## Lubricate the following areas:

- Blade Tension Mechanism:** Open the main blade guard, then drop a few drops of oil on the tension knob lead screw.
- Blade and Guides:** Drop a few drops of light machine oil on the blade and the blade guides daily.
- Gear Box:** Change the gear oil annually.
- Table and Machined Surfaces:** Keep bare metal surfaces rust-free with regular applications of a quality way oil.
- Vise Leadscrew:** Clean the leadscrew, then brush on a thin layer of grease as needed.

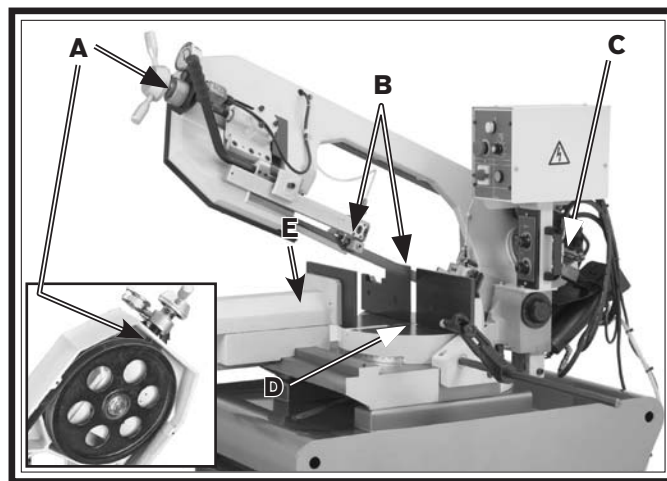


Figure 38. Lubrication points.

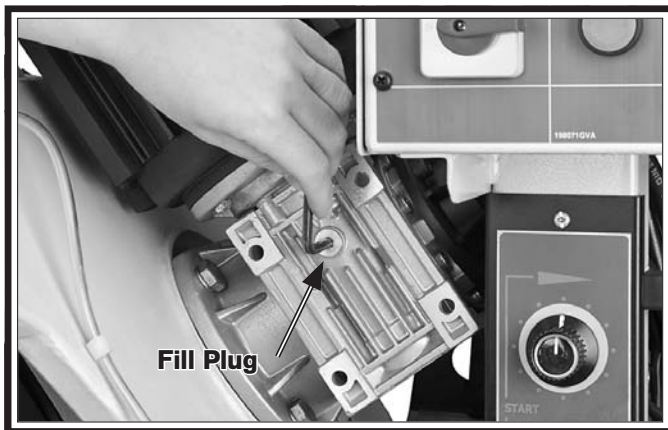
## Gearbox

### Items Needed

	Qty
Wrench 4mm .....	1
Mobilgear 600 XP 680 or ISO 680 Equivalent Gear Oil .....	Approximately 1 Pint
Drain Pan .....	1
Shop Rags .....	As needed
Wooden Blocks .....	As needed

### To change the gearbox oil:

1. DISCONNECT BANDSAW FROM POWER!
2. Loosen the gearbox fill plug (see **Figure 39**).



**Figure 39. Gearbox fill plug.**

3. Place the drain pan under the drain plug, then remove the drain plug (see **Figure 40**) to drain the oil.



**Figure 40. Gear box lubrication.**

4. Replace the drain plug, lower the headstock, then add oil through the fill plug hole until the oil level reaches the fill hole.
5. Replace the fill plug.

## Machine Storage

All machinery will develop serious rust problems and corrosion damage if it is not properly prepared for storage. If decommissioning this machine, use the steps in this section to ensure that it remains in good condition.

### To prepare your machine for storage or decommission it from service:

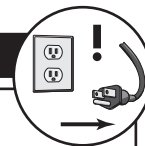
1. DISCONNECT BANDSAW FROM POWER!
2. Thoroughly clean all unpainted, bare metal surfaces, then coat them with a light weight grease or rust preventative. Take care to ensure these surfaces are completely covered but that the grease or rust preventative is kept off of painted surfaces.  
  
If the machine will be out of service for only a short period of time, use a quality medium-weight machine oil (not auto engine oil) in place of the grease or rust preventative.
3. Loosen or remove the blade so it does not stretch or rust while the machine is stored.
4. If the machine will be out of service for only a short period of time, start the machine once a week and run all gear-driven components for a few minutes. This will put a fresh coat of gear oil on the gearing components inside the gearbox.

If it will be out of service for a long period of time, drain, then completely fill the gearbox with the recommended gear oil so components above the normal oil level do not develop rust. (Make sure to put a tag on the controls as a reminder for the re-commissioning process to adjust the gear oil level before starting the machine.)

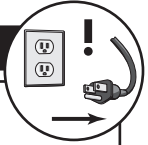
5. Completely cover the machine with a tarp or plastic sheet that will keep out dust and resist liquid or moisture. If machine will be stored in/near direct sunlight, use a cover that will block the sun's rays.

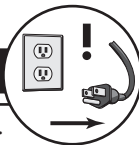
If you need replacement parts, or if you are unsure how to do any of the solutions given here, feel free to call us at (360) 734-1540.

Symptom	Possible Cause	Possible Solution
Machine does not start.	<ol style="list-style-type: none"> <li>1. Power supply switched off/has incorrect voltage.</li> <li>2. Blown fuse/tripped circuit breaker at main panel.</li> <li>3. Plug or receptacle is corroded or mis-wired.</li> <li>4. Break or short in wiring; or loose connections.</li> <li>5. Motor wired incorrectly.</li> <li>6. Motor ON/OFF switch at fault.</li> <li>7. Start capacitor blown or at fault.</li> <li>8. Centrifugal switch at fault.</li> <li>9. Motor at fault.</li> </ol>	<ol style="list-style-type: none"> <li>1. Switch power supply on/verify voltage.</li> <li>2. Correct the cause of overload, then reset/replace fuse or breaker.</li> <li>3. Clean/retighten contacts; correct the wiring.</li> <li>4. Trace/replace broken or corroded wires; fix loose connections.</li> <li>5. Wire motor correctly (refer to inside junction box cover or manual).</li> <li>6. Replace switch.</li> <li>7. Replace start capacitor.</li> <li>8. Adjust/replace centrifugal switch.</li> <li>9. Test for shorted windings, bad bearings and repair or replace.</li> </ol>
Main motor chatters during startup or during operation.	<ol style="list-style-type: none"> <li>1. Extension cord (if used) is causing voltage drop.</li> <li>2. Power supply has incorrect voltage on one or more legs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Move machine closer to the power source or use a larger gauge or shorter extension cord.</li> <li>2. Contact your power company to fix the power supply.</li> </ol>
Machine has excessive vibration or noise.	<ol style="list-style-type: none"> <li>1. Blade is missing teeth.</li> <li>2. Guide post is loose.</li> <li>3. Motor or table is loose.</li> <li>4. Machine incorrectly mounted on floor.</li> <li>5. Centrifugal switch out of adjustment; at fault.</li> <li>6. Air is in the hydraulic system, causing the headstock to "hop".</li> <li>7. Motor bearings worn or damaged.</li> <li>8. Wheel bearings are worn.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace blade.</li> <li>2. Tighten the guide post.</li> <li>3. Tighten any loose fasteners.</li> <li>4. Level/shim base; tighten/adjust mounting hardware or feet.</li> <li>5. Adjust/replace centrifugal switch.</li> <li>6. Bleed hydraulic system.</li> <li>7. Replace motor bearings or replace motor.</li> <li>8. Replace wheel bearings.</li> </ol>



Symptom	Possible Cause	Possible Solution
Motor stalls or slows when operating.	<ol style="list-style-type: none"> <li>1. Too much pressure when feeding workpiece.</li> <li>2. Workpiece is warped and binding blade.</li> <li>3. Blade is dull, wanders, and gets pinched in the cut.</li> <li>4. Blade is loose.</li> <li>5. Blade is loading up.</li> <li>6. Blade is not correct for material being cut.</li> <li>7. Motor overheated.</li> <li>8. Motor wired incorrectly.</li> <li>9. Motor at fault.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce pressure when feeding workpiece.</li> <li>2. Fabricate a jig for better workpiece control.</li> <li>3. Replace blade, adjust guides and tracking.</li> <li>4. Clean wheels and increase blade tension.</li> <li>5. Install a blade with more suitable TPI or different style of teeth.</li> <li>6. Use the correct blade for the operation. Refer to <b>Blade Selection</b> section beginning on <b>Page 24</b>.</li> <li>7. Let cool, clean motor, and reduce workload.</li> <li>8. Review wiring diagram on motor cover; correct wire connections.</li> <li>9. Test for shorted windings, bad bearings and repair or replace.</li> </ol>
Workpiece angle incorrect or out of square.	<ol style="list-style-type: none"> <li>1. Scale not calibrated or loose vise.</li> <li>2. Blade guides are loose or out of alignment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Zero fence to blade and realign scale. Tighten any loose fasteners.</li> <li>2. Tighten any loose hardware or lock levers. Align the blade guides (see <b>Page 28</b>).</li> </ol>
Blade tracks incorrectly, slips on wheels, or comes off wheels.	<ol style="list-style-type: none"> <li>1. Blade tension is too loose.</li> <li>2. Incorrect blade for bandsaw.</li> <li>3. Feed rate is too fast.</li> <li>4. Blade guides need adjustment.</li> <li>5. Blade is bell-mouthed.</li> <li>6. Blade is dull, wanders, and gets pinched in the cut.</li> <li>7. Wheels are loaded with metal shavings.</li> <li>8. The blade has insufficient support.</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase blade tension (see <b>Page 24</b>).</li> <li>2. Install correct blade for machine (see <b>Page 24</b>).</li> <li>3. Reduce feed rate, or decrease blade TPI.</li> <li>4. Adjust blade guides (see <b>Page 40</b>).</li> <li>5. Install new blade, and regularly remove tension from blade when not in use.</li> <li>6. Replace blade, re-secure the workpiece from shifting.</li> <li>7. Clean wheels.</li> <li>8. Tighten the blade guide as close to the workpiece as possible (not less than ¼").</li> </ol>





Symptom	Possible Cause	Possible Solution
<p>The cut is crooked, the blade wanders, cuts slow, or shows overheating on one side of the cut or the blade.</p>	<ol style="list-style-type: none"> <li>1. The feed rate/pressure is too high.</li> <li>2. Loose blade.</li> <li>3. Blade is loading up.</li> <li>4. Incorrect coolant mixture for workpiece/cut.</li> <li>5. Blade installed backwards.</li> <li>6. Dull blade; missing teeth.</li> <li>7. The blade speed is wrong.</li> </ol>	<ol style="list-style-type: none"> <li>1. Decrease the feed rate/pressure (see <b>Page 25</b>).</li> <li>2. Keep blade properly tensioned (see <b>Page 24</b>).</li> <li>3. Install a blade with more suitable TPI or different style of teeth.</li> <li>4. Use correct coolant mixture (refer to coolant manufacturer's recommended mixture).</li> <li>5. Check blade rotation as described in "test run" and reverse blade if necessary.</li> <li>6. Replace blade <b>23</b>.</li> <li>7. Adjust feed rate and cutting speed as required (see <b>Page 25</b>).</li> </ol>
<p>Blade dulls prematurely, or metal sticking to the blade.</p>	<ol style="list-style-type: none"> <li>1. Blade is improperly broken in.</li> <li>2. The blade gullets are loading up with chips.</li> <li>3. The blade TPI is too fine for the workpiece, so the teeth load up and overheat.</li> <li>4. Incorrect coolant mixture for workpiece/cut.</li> <li>5. The workpiece has hard spots, welds, or scale.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace blade, and complete blade break in procedure (see <b>Pages 23 &amp; 24</b>).</li> <li>2. Use a blade that has larger gullets to carry out material.</li> <li>3. Use a coarser-tooth blade, adjust feed rate, adjust blade speed, make sure the brush is working.</li> <li>4. Use correct coolant mixture (refer to coolant manufacturer's recommended mixture).</li> <li>5. Replace the blade with a special blade for cutting hardened materials.</li> </ol>
<p>Repetitive ticking noise coming from machine.</p>	<ol style="list-style-type: none"> <li>1. Blade is missing teeth.</li> <li>2. Blade weld contacting blade guides.</li> <li>3. Blade weld may be failing.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace blade <b>23</b>.</li> <li>2. Grind blade weld down smaller.</li> <li>3. Cut and reweld the blade, or replace the blade.</li> </ol>
<p>Blade wears on one side or shows overheating.</p>	<ol style="list-style-type: none"> <li>1. The blade guides are worn or mis-adjusted.</li> <li>2. The blade support is inadequate.</li> <li>3. Dull or incorrect blade.</li> <li>4. Incorrect coolant mixture for workpiece/cut.</li> <li>5. Blade is bell-mouthed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-adjust or replace the blade guides.</li> <li>2. Tighten the blade guide as close to the workpiece as possible.</li> <li>3. Replace blade (see <b>Page 23</b>).</li> <li>4. Use correct coolant mixture (refer to coolant manufacturer's recommended mixture).</li> <li>5. Install new blade (see <b>Page 23</b>).</li> </ol>
<p>Vibration when operating or cutting.</p>	<ol style="list-style-type: none"> <li>1. Loose or damaged blade.</li> <li>2. Worn wheel bearing.</li> <li>3. Bent or dull blade.</li> <li>4. Loose machine component.</li> <li>5. Wheels worn or incorrectly installed.</li> <li>6. Bandsaw blade wheel appears bent.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten or replace blade (see <b>Pages 24 &amp; 23</b>).</li> <li>2. Check/replace wheel bearing.</li> <li>3. Replace blade (see <b>Page 23</b>).</li> <li>4. Tighten loose component.</li> <li>5. Replace wheels.</li> <li>6. Check and replace for bad wheel or bearing.</li> </ol>

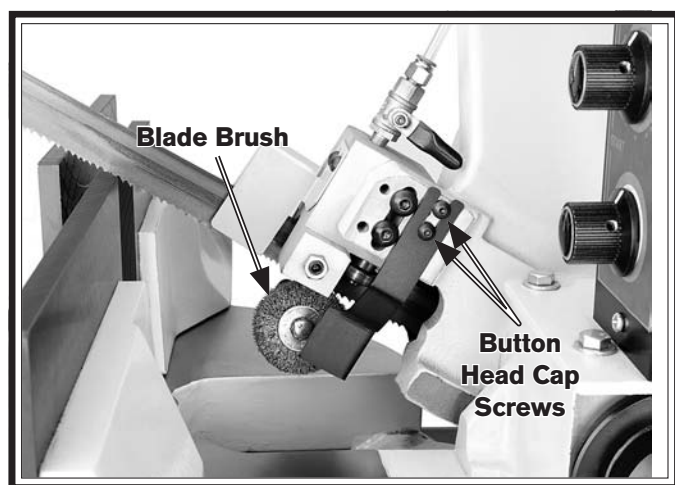
## Blade Brush

The Model SB1020 has a blade brush to help keep metal chips off the blade wheels. It will wear over time and require re-adjustment when it no longer contacts the blade.

<b>Tools Needed</b>	<b>Qty</b>
Hex Wrench 4mm .....	1

### To adjust the blade brush:

1. DISCONNECT BANDSAW FROM POWER!
2. Loosen the button head cap screws shown in **Figure 41**.



**Figure 41. Blade brush adjustments.**

3. Slide the blade brush bracket as needed so the blade extends approximately 1/8" into the bristles of the brush. Hold the bracket in position, then re-tighten the button head cap screws.

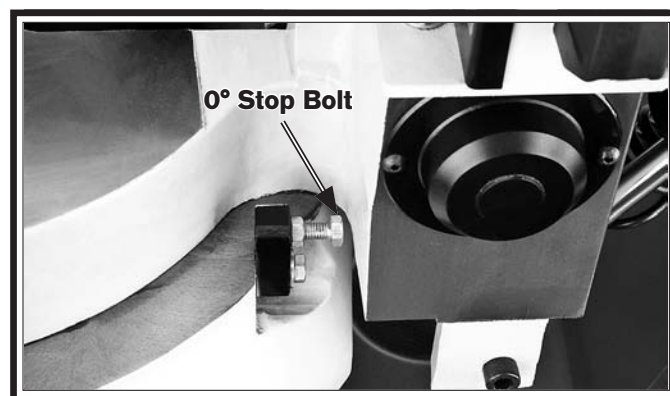
## Angle Stops

The swivel base is equipped with three angle stops to provide quick adjustments to 60° to the left, 0°, and 45° to the right°. If cuts made using these stops are not sufficiently accurate, the stops will need to be adjusted.

<b>Tools Needed</b>	<b>Qty</b>
Wrench 12mm .....	1

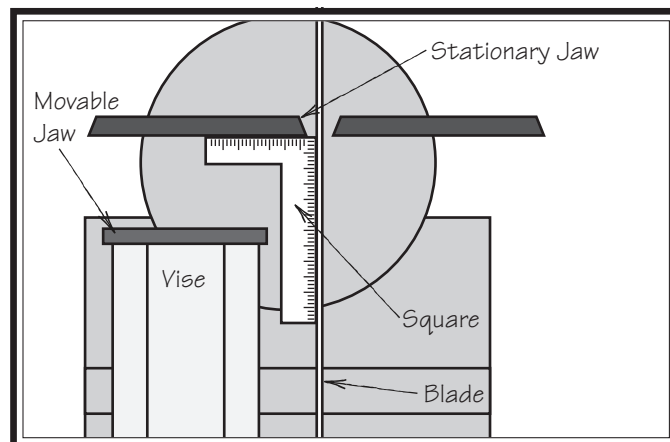
### To adjust the angle stops:

1. DISCONNECT BANDSAW FROM POWER!
2. Rotate the headstock to the right approximately 10°, engage the 0° angle stop (**Figure 42**) by flipping it up, then rotate the headstock to the left until it stops against the 0° stop. Tighten the headstock lock lever.



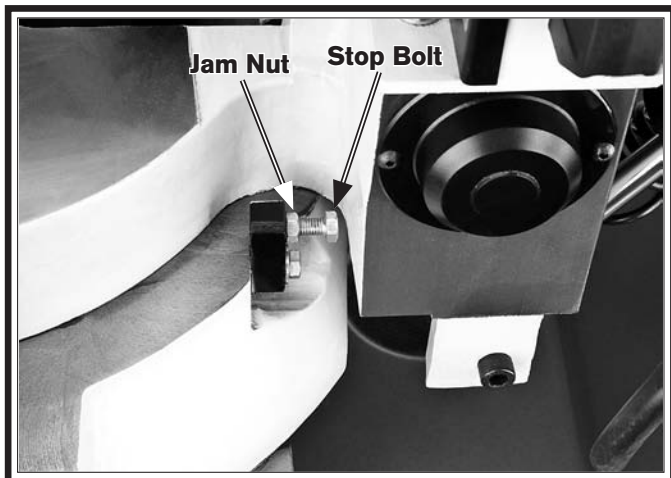
**Figure 42. 0° Angle stop.**

3. Lower the headstock, then place a square flat on the table and against both the stationary jaw and the blade, as shown in **Figure 43**.



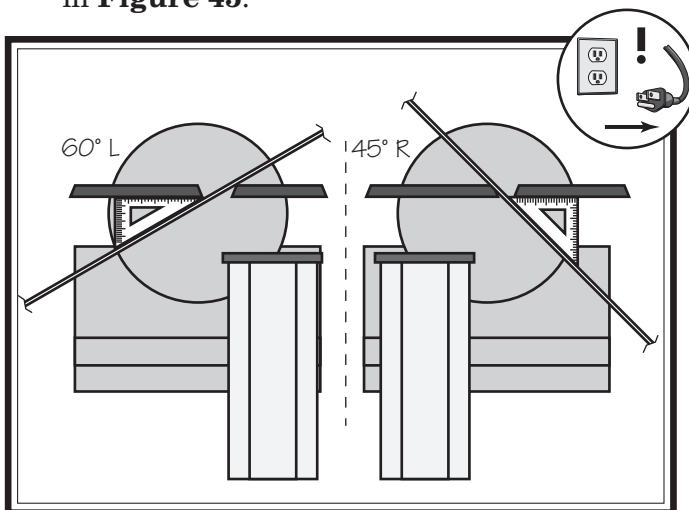
**Figure 43. Testing vise/blade squareness.**

- If the square does not fit snugly against both the stationary jaw and the blade, loosen the jam nut shown in **Figure 44**, then thread the stop bolt inward.



**Figure 44. Stop adjustment.**

- Loosen the headstock lock lever, rotate the headstock so that the blade is square to the vise, then re-tighten the headstock lock lever.
- Adjust the stop bolt as needed until it just touches the cast iron swivel base, as shown in **Figure 44**, then snug the jam nut against the stop block without turning the stop bolt.
- Repeat this procedure for the 60° left and 45° right stops using a 45° square and a 30°/60° triangle (or an adjustable square), as shown in **Figure 45**.



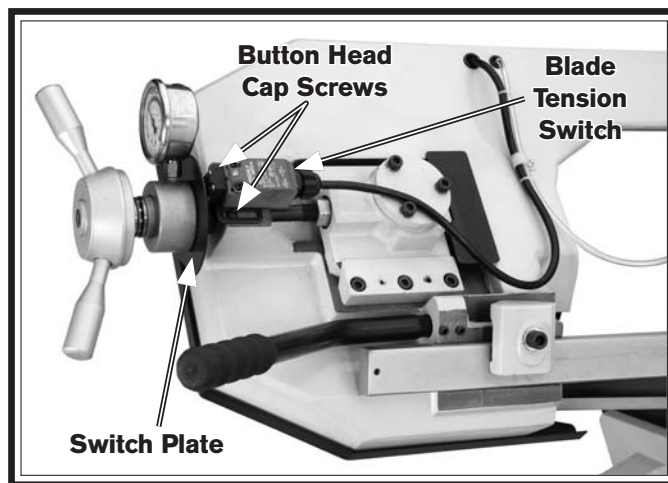
**Figure 45. 60° left and 45° right stop adjustment.**

## Limit Switches

The Model SB1020 is equipped with limit switches that prevent the saw from operating if the blade is not properly tensioned and stop the saw motor when it reaches the end of a cut. If either of these functions does not operate correctly, you will need to adjust the appropriate limit switch.

### To adjust the blade tension switch:

- DISCONNECT BANDSAW FROM POWER!
- Tension the blade until the tension gauge reads 20,000 PSI, which is the transition from yellow to green.
- Use a 3mm hex wrench to loosen the two button head cap screws that secure the blade tension switch bracket shown in **Figure 46**.



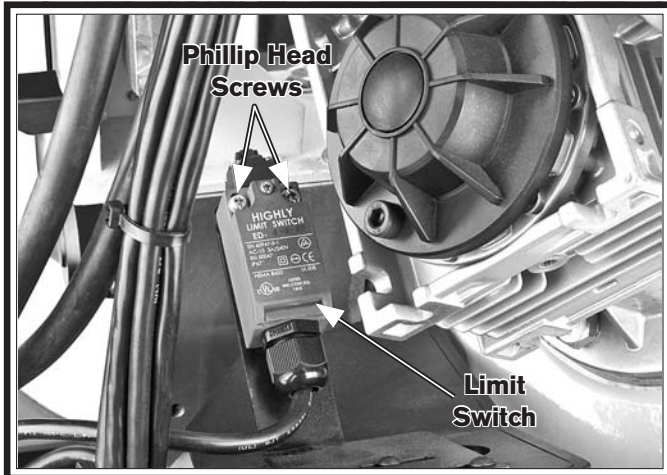
**Figure 46. Blade tension limit switch.**

- Slide the switch away from the switch plate to make sure it releases, then slowly slide it back towards the switch plate just until you hear the switch click. Hold it in this position, then re-tighten the button head cap screws.
- Release tension from the blade. If the switch does not immediately click again, signaling that tension has been released, repeat **Steps 3–4**, slightly adjusting the switch away from the switch plate.



**To adjust the headstock travel switch:**

1. DISCONNECT BANDSAW FROM POWER!
2. Fully lower the headstock by opening the downfeed valve. Allow it to come to a stop on its own (see **Downfeed Stop Bolt** on this page for more details).
3. Loosen the Phillips head screws that secure the blade travel limit switch shown in **Figure 46**.



**Figure 47. Blade stop limit switch (viewed from above).**

4. Slide the switch away from the control panel column to make sure it releases, then slowly slide it back towards the column just until you hear the switch click. Hold it in this position, then re-tighten the Phillips head screws.
5. Lift the headstock, then allow it to lower on its own, adjusting the feed rate knob if necessary. Listen for a click from the switch when the headstock reaches the bottom of its travel. If the switch does not click, repeat **Steps 3–4**, slightly adjusting the switch slightly towards the control panel column.

## Downfeed Stop Bolt

The Model SB1020 has an adjustable stop bolt to prevent the blade from contacting the table when the headstock reaches the bottom of its travel. If the blade contacts the table, or if the blade does not travel far enough to complete the cut, this bolt will have to be adjusted.

**To adjust the downfeed stop bolt:**

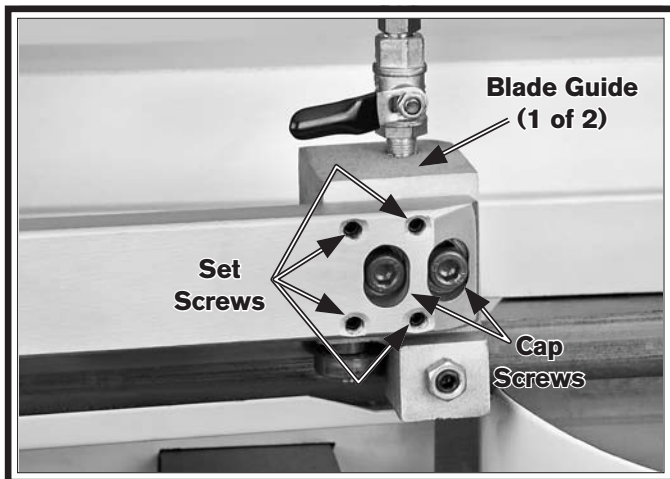
1. DISCONNECT BANDSAW FROM POWER!
2. Adjust the downfeed stop bolt and jam nut shown in **Figure 48** with a 14mm wrench, so the bandsaw blade teeth are just below the table surface when the cut is complete.
3. Tighten the jam nut against the base to prevent the stop bolt from loosening during use.



**Figure 48. Adjusting downfeed stop bolt.**

## Squaring Blade

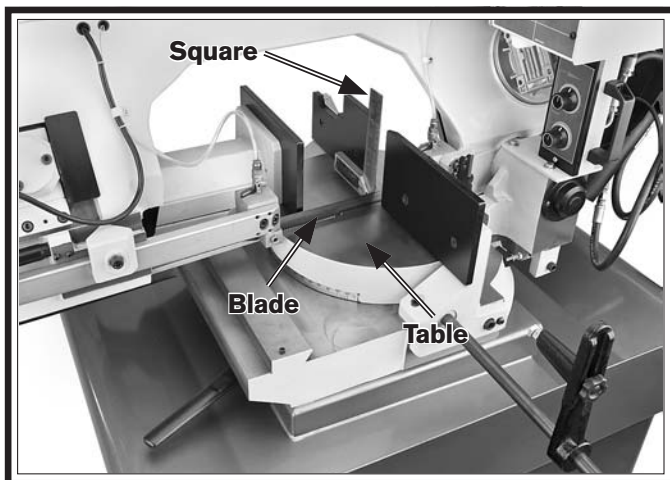
A blade that is perpendicular to the table surface provides the best cutting results with minimal side loading and blade wear. The blade is held perpendicular to the table by the two blade guides. Each guide is held in place by two cap screws and aligned with the four set screws shown in **Figure 49**.



**Figure 49. Blade guide adjustments.**

### To square the blade to the table:

1. DISCONNECT BANDSAW FROM POWER!
2. Separate the blade guides as far as possible, then lower the bandsaw all the way until it contacts the downfeed stop bolt.
3. Place a square on the table bed and against the edge of the blade, as shown in **Figure 50**, then check different points along the length of the table between the blade guides.



**Figure 50. Squaring the blade.**

4. If the blade is not square to the table, loosen the cap screws shown in **Figure 49** one to two turns. Remove the blade brush assembly (refer to **Page 37**), then repeat for the second blade guide.

- If the top of the blade tilts away from the square, loosen the top two set screws shown in **Figure 49** and tighten the bottom two set screws an equal amount while keeping an eye on the blade squareness (the amount you tighten and loosen the screws depends on how far from square the blade is). Repeat for the second blade guide.
- If the bottom of the blade tilts away from the square, tighten the top two set screws shown in **Figure 49** an equal amount and loosen the bottom two set screws while keeping an eye on the blade squareness (the amount you tighten and loosen the screws depends on how far from square the blade is). Repeat for the second blade guide.

5. Tighten the cap screws loosened in **Step 4**.
6. Repeat **Steps 3–5** as necessary until the blade is perfectly square to the table.



# Electrical Safety Instructions

These pages are accurate at the time of printing. In the constant effort to improve, however, we may make changes to the electrical systems of future machines. Study this section carefully. If you see differences between your machine and what is shown in this section, call Technical Support at (360) 734-1540 for assistance BEFORE making any changes to the wiring on your machine.

- Shock Hazard:** It is extremely dangerous to perform electrical or wiring tasks while the machine is connected to the power source. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. For your own safety, disconnect machine from the power source before servicing electrical components or performing any wiring tasks!
- Wire Connections:** All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.
- Modifications:** Using aftermarket parts or modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire.
- Motor Wiring:** The motor wiring shown in these diagrams is current at the time of printing, but it may not match your machine. Always use the wiring diagram inside the
- Circuit Requirements:** Connecting the machine to an improperly sized circuit will greatly increase the risk of fire. To minimize this risk, only connect the machine to a power circuit that meets the minimum requirements given in this manual.
- Capacitors/Inverters:** Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.
- Wire/Component Damage:** Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components before completing the task.
- Experiencing Difficulties:** If you are experiencing difficulties understanding the information included in this section, contact

## WIRING DIAGRAM COLOR KEY

BLACK — Bk	BLUE WHITE — Bw	RED — Rd	PINK — Pk	WHITE — Wt
BLUE — Bl	GREEN — Gn	LIGHT BLUE — Lb	PURPLE — Pu	YELLOW GREEN — Yg
BROWN — Br	GRAY — Gy	ORANGE — Or	TUR-QUIOSE — Tu	YELLOW — Yl

**NOTICE:** The photos and diagrams included in this section are best viewed in color. You can see them in color at [www.southbendlathe.com](http://www.southbendlathe.com).

# 220V Conversion

Wiring diagrams are provided in this section showing the Model SB1020 wired for both 110V and 220V. Refer to these diagrams if needed when following this procedure. Additionally, you must purchase a 220V switch in order to complete the conversion.

Items Needed	Qty.
220V Switch (Part No. PSB1020204).....	1
Phillips Screwdriver #2 .....	1
Wrench 18mm .....	1
Wire Nut (sized for three 14 Ga. wires).....	1
Electrical Tape .....	As needed
Wire Stripper.....	As needed

### To convert the Model SB1020 to 220V:

1. DISCONNECT BANDSAW FROM POWER!
2. Open the motor junction box, then loosen the wire terminal screws indicated in Figure 51. Remove the wires connected to those terminals.

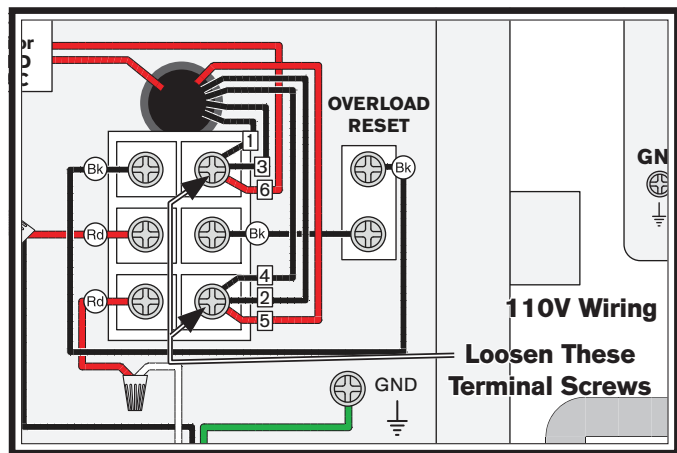


Figure 51. Wiring terminal locations.

3. Use a wire nut to connect wires #2, #3, and #5, then wrap them with electrical tape.
4. Connect wires #1 and #6 to the upper right terminal and wire #4 to the lower right terminal shown in Figure 52. Tighten the terminal screws to secure the wires.

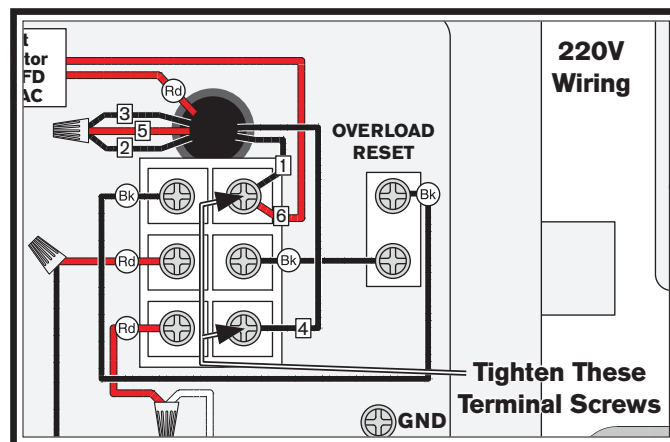
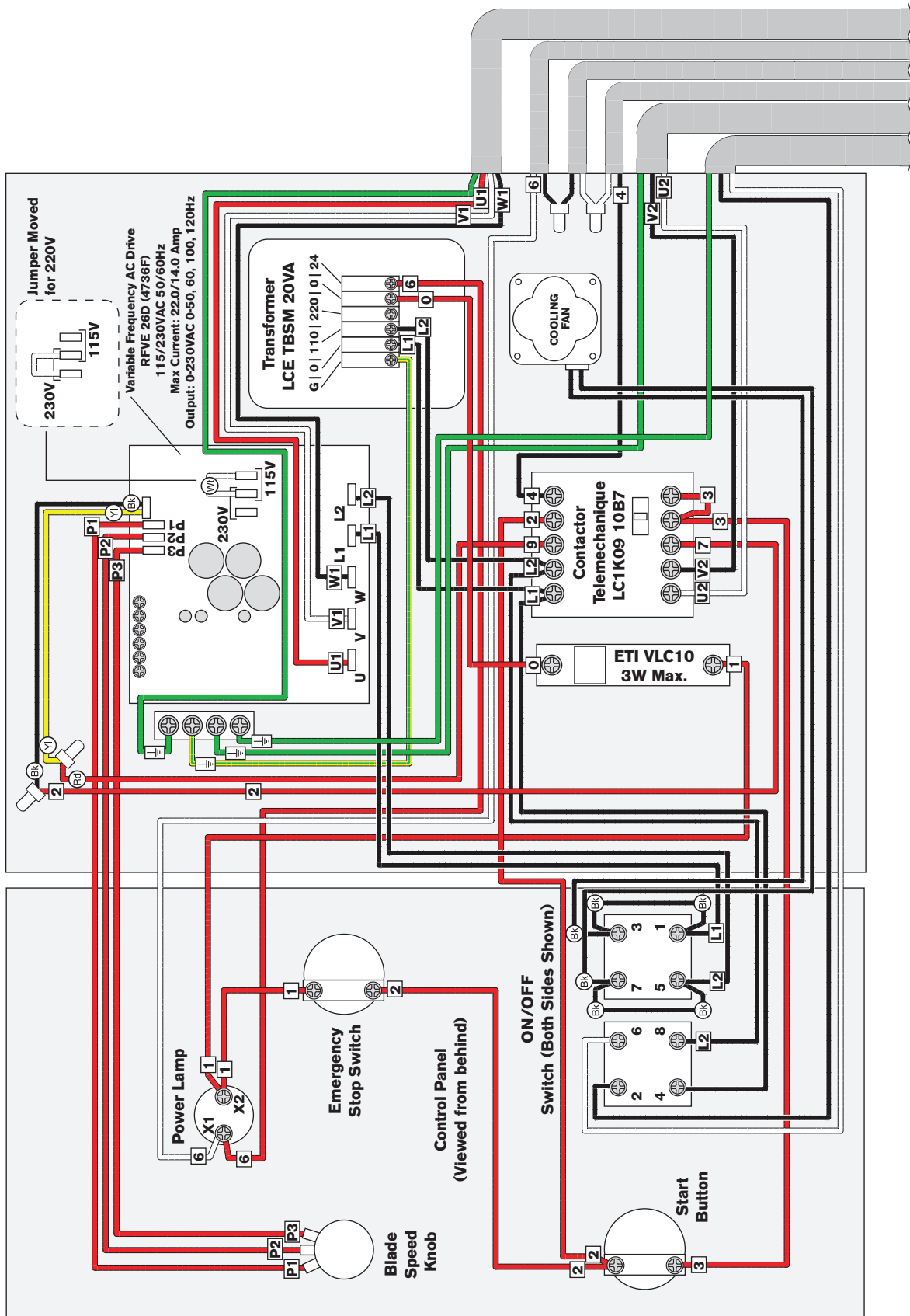


Figure 52. Rewired for 220V.

5. Close the motor junction box.
6. Remove the four hex bolts that secure the machine to the cabinet, then with the help of another person, remove the machine from the cabinet. Carefully place the machine on its side to gain access to the underside of the base.
7. Remove the black plastic switch cover from behind the switch. Disconnect the two wires from the back of the switch, then remove the switch.
8. Install the 220V switch into the machine base, then replace the two wires removed in Step 7 in the corresponding locations from which they were removed.
9. Replace the switch cover, then with the help of another person, place the machine back onto the cabinet and secure it with the hex bolts removed in Step 6.

# Electrical Box Wiring Diagram

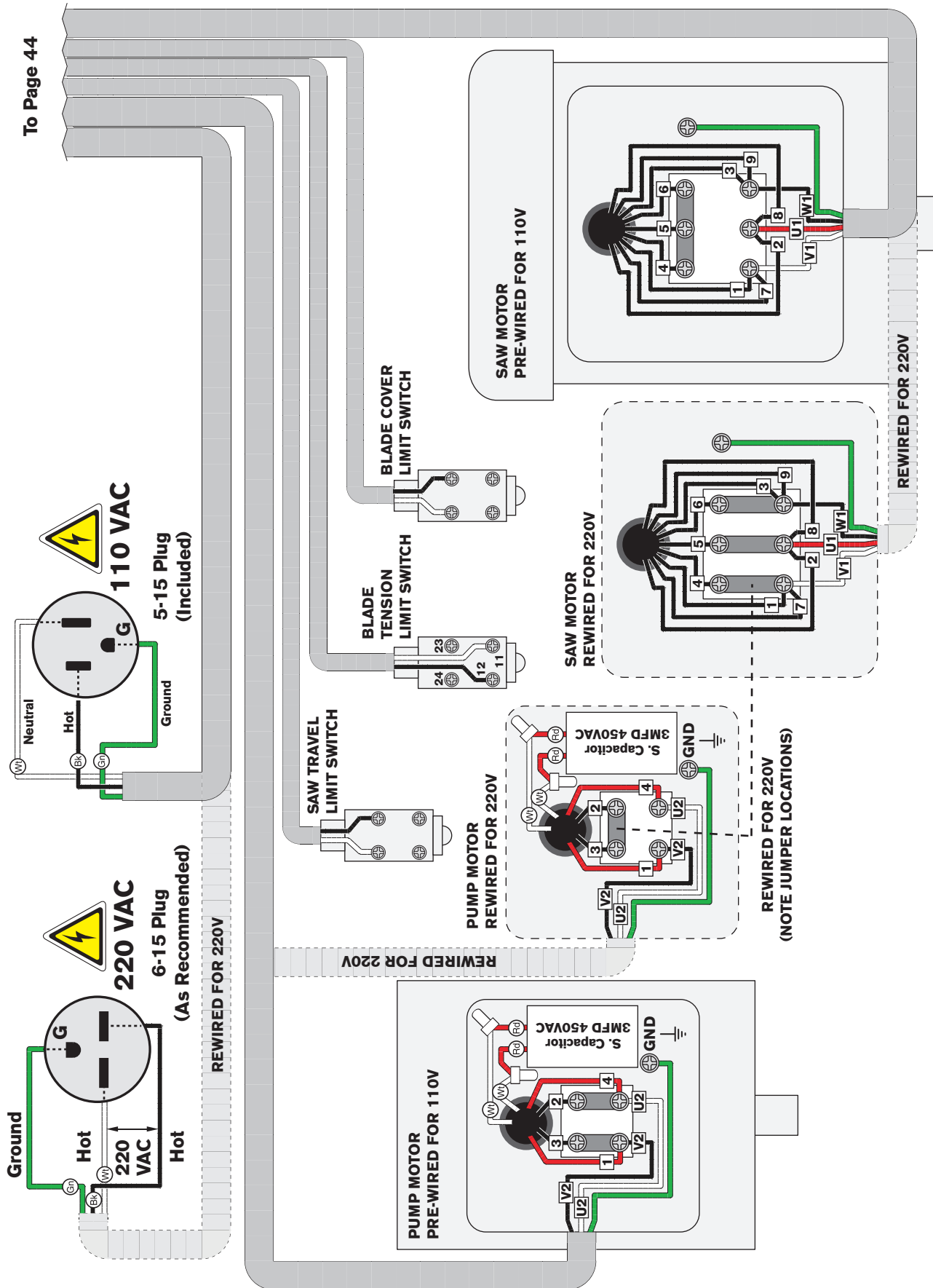


To Page 45



# Components Wiring Diagram

To Page 44



READ PAGE 42 BEFORE DOING ANY WIRING!



**South Bend Lathe Co.**

# Wiring Component Locations

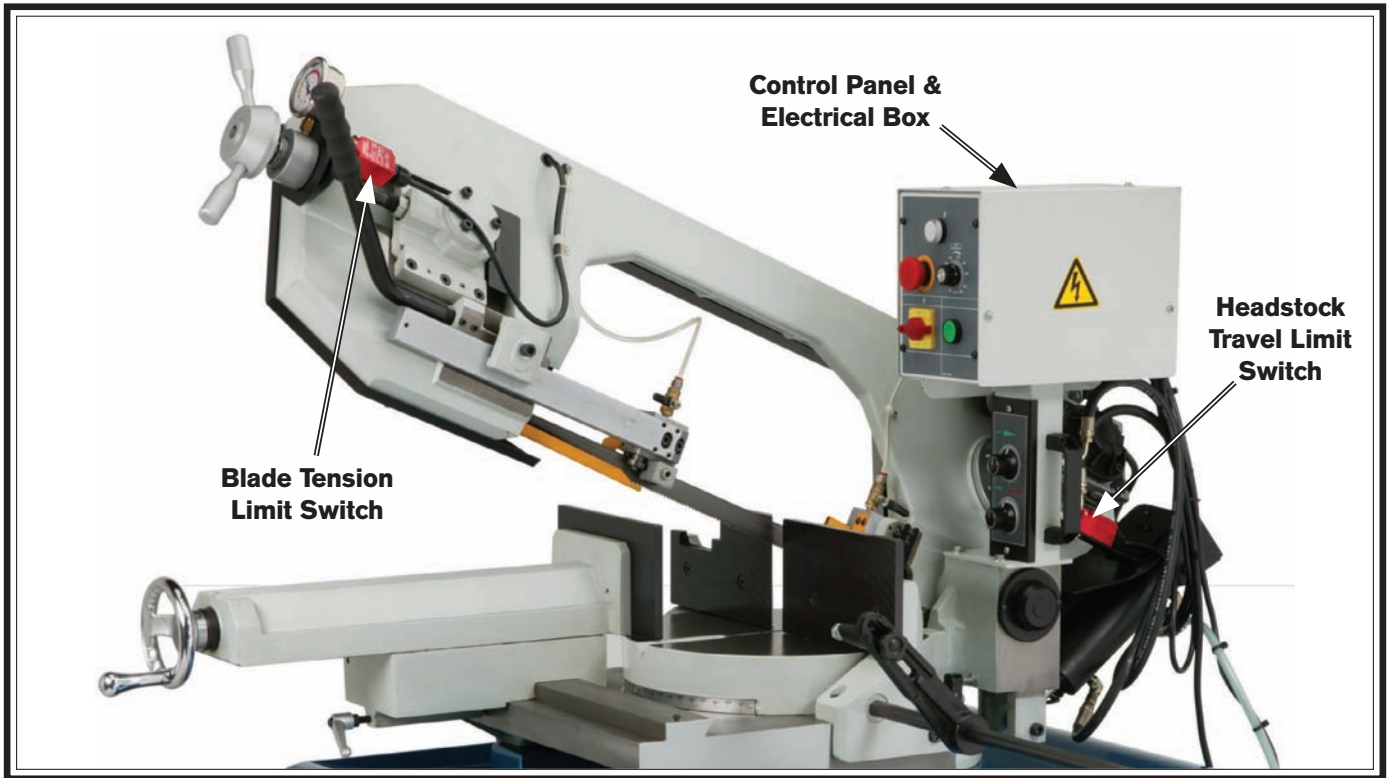


Figure 53. Wiring component locations.



Figure 54. Coolant pump motor location.

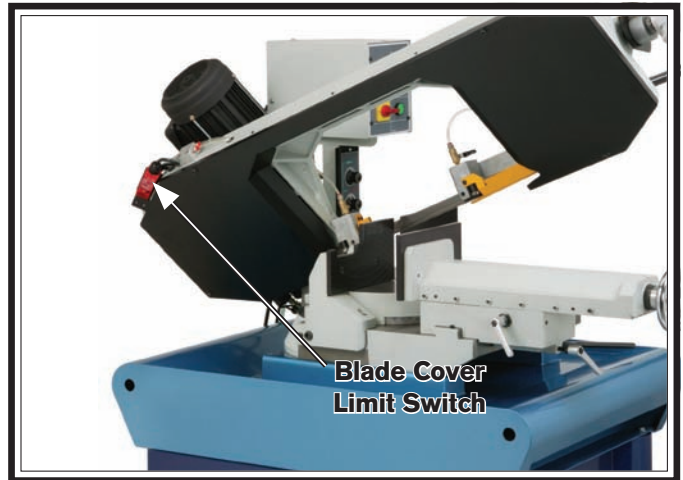
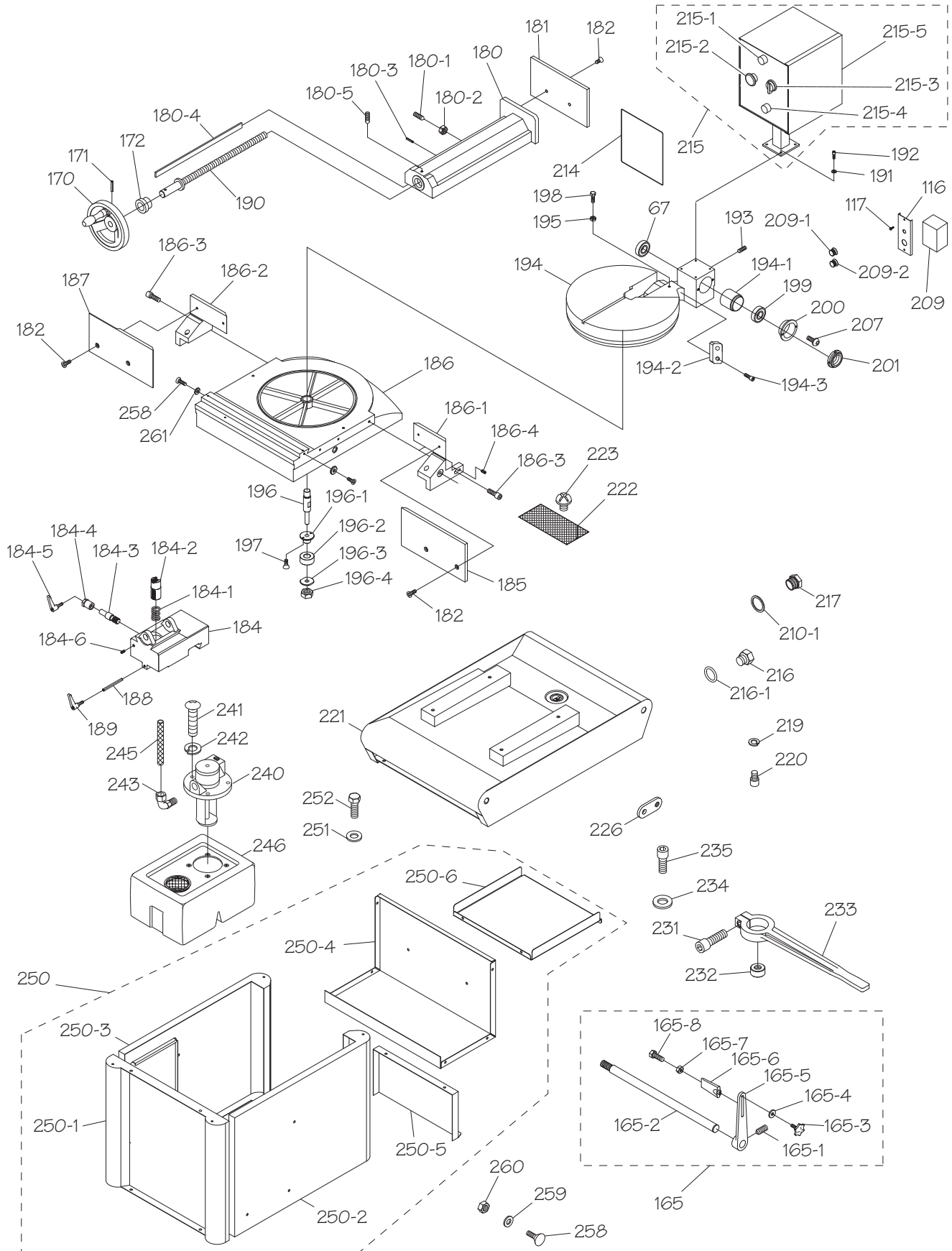


Figure 55. Blade cover limit switch location.





# Cabinet & Base

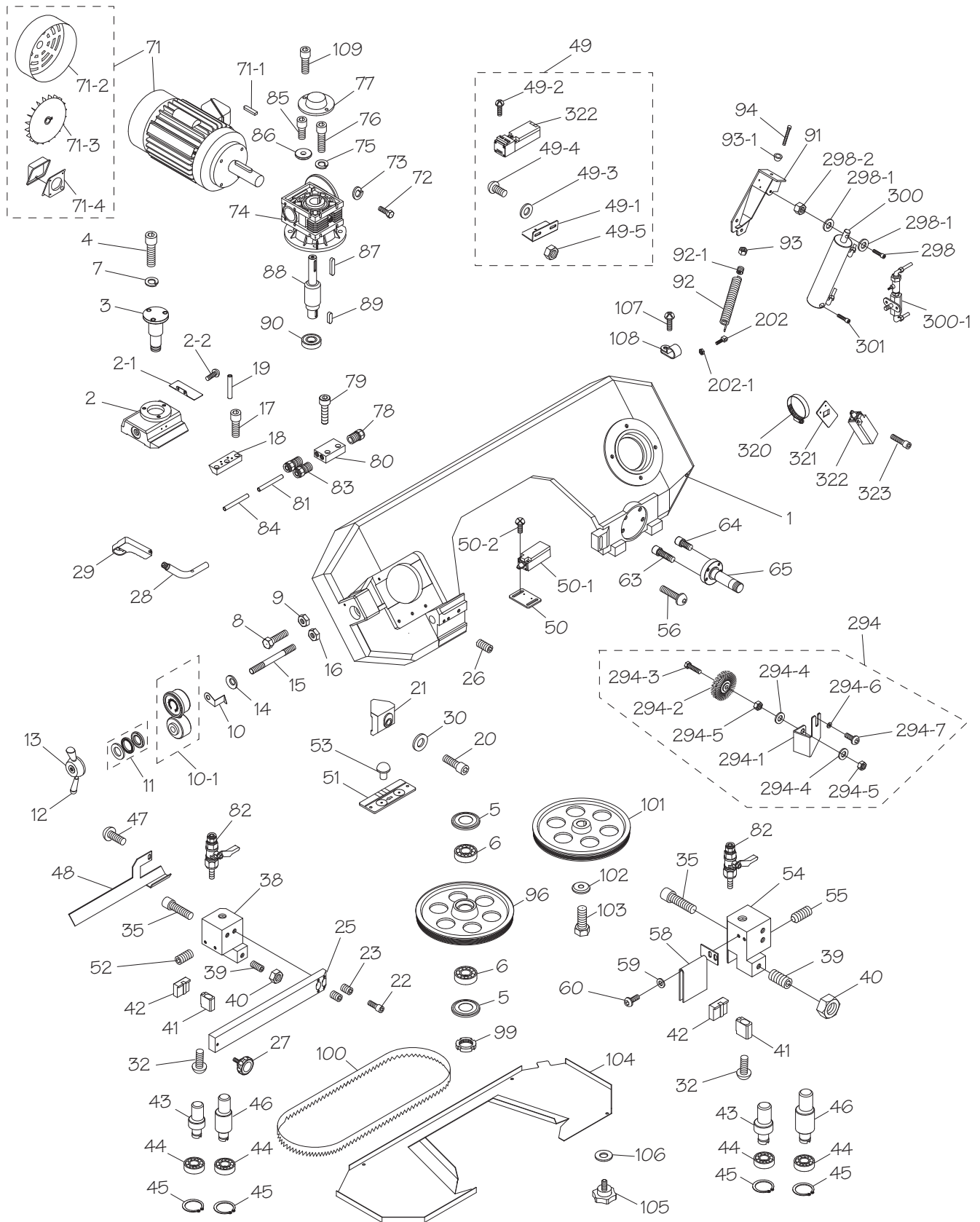


# Cabinet & Base Parts List

REF	PART #	DESCRIPTION
67	P32007	TAPER ROLLER BEARING 32007
110	PCAP01M	CAP SCREW M6-1 X 16
111	PNO1M	HEX NUT M6-1
116	PSB1020116	LOWER CONTROL BOX PANEL
117	PSO9M	PHLP HD SCR M5-.8 X 10
165	PSB1020165	WORK STOP ASSEMBLY
165-1	PSS01M	SET SCREW M6-1 X 10
165-2	PSB1020165-2	WORK STOP ROD
165-3	PSB1020165-3	KNOB BOLT 1/4-20
165-4	PW06	FLAT WASHER 1/4
165-5	PSB1020165-5	WORK STOP BRACKET
165-6	PSB1020165-6	DISTANCE BRACKET
165-7	PNO2M	HEX NUT M10-1.5
165-8	PB32M	HEX BOLT M10-1.5 X 25
170	PSB1020170	WISE HANDWHEEL
171	PRP91M	ROLL PIN 5 X 35
172	PSB1020172	BUSHING
180	PSB1020180	SMALL VISE JAW
180-1	PSS29M	SET SCREW M6-1 X 35
180-2	PNO1M	HEX NUT M6-1
180-3	PRP93M	ROLL PIN 6 X 25
180-4	PSB1020180-4	WISE GIB
180-5	PSS17M	SET SCREW M8-1.25 X 6
181	PSB1020181	LARGE VISE JAW
182	PFH02M	FLAT HD SCR M6-1 X 12
184	PSB1020184	VISE BASE
184-1	PSB1020184-1	COMPRESSION SPRING
184-2	PSB1020184-2	PLUNGER
184-3	PSB1020184-3	GEAR SHAFT
184-4	PSB1020184-4	SHAFT BUSHING
184-5	PSB1020184-5	LOCK LEVER
184-6	PSS06M	SET SCREW M8-1.25 X 16
185	PSB1020185	RIGHT VISE BRACKET
186	PSB1020186	SWIVEL BASE
186-1	PSB1020186-1	LEFT VISE SUPPORT
186-2	PSB1020186-2	RIGHT VISE SUPPORT
186-3	PCAP77M	CAP SCREW M12-1.75 X 30
186-4	PSS78M	SET SCREW M12-1.75 X 25
187	PSB1020187	LEFT VISE BRACKET
188	PSB1020188	LOCK LEVER SHAFT
189	PSB1020189	LOCK LEVER
190	PSB1020190	VISE LEADSCREW
191	PW01M	FLAT WASHER 8MM
192	PCAP31M	CAP SCREW M8-1.25 X 25
193	PSS06M	SET SCREW M8-1.25 X 16
194	PSB1020194	SWIVEL BASE CAP
194-1	PSB1020194-1	BUSHING
194-2	PSB1020194-2	BRACKET
194-3	PCAP31M	CAP SCREW M8-1.25 X 25
195	PNO2M	HEX NUT M10-1.5
196	PSB1020196	SWIVEL BASE SHAFT
196-1	PSB1020196-1	BUSHING

REF	PART #	DESCRIPTION
196-2	PSB1020196-2	SPACER
196-3	PSB1020196-3	SWIVEL BASE SHAFT FLAT WASHER
196-4	PN32M	HEX NUT M14-2
197	PFH05M	FLAT HD SCR M5-.8 X 12
198	PB116M	HEX BOLT M10-1.5 X 45
199	P32007	TAPER ROLLER BEARING 32007
200	PSB1020200	BEARING CAP
201	PSB1020201	SPANNER NUT
207	PS20M	PHLP HD SCR M5-.8 X 15
209	PSB1020209	LOWER CONTROL BOX
209-1	PSB1020209-1	DOWNFEED RATE KNOB
209-2	PSB1020209-2	START/STOP KNOB
210-1	PORP016	O-RING 15.8 X 2.4 P16
214	PSB1020214	UPPER CONTROL BOX PLATE
215	PSB1020215	UPPER CONTROL BOX ASSEMBLY
215-1	PSB1020215-1	POWER LAMP
215-2	PSB1020215-2	EMERGENCY STOP BUTTON
215-3	PSB1020215-3	BLADE SPEED SWITCH
215-4	PSB1020215-4	START/RESET BUTTON
215-5	PSB1020215-5	UPPER CONTROL BOX
216	PSB1020216	DRAIN PLUG 3/8PT
216-1	PORP015	O-RING 14.8 X 2.4 P15
217	PSB1020217	OIL SIGHT GLASS
219	PLW06M	LOCK WASHER 10MM
220	PB56M	CAP SCREW M10-1.5 X 20
221	PSB1020221	COOLANT DRAIN PAN ASSEMBLY
222	PSB1020222	COOLANT SCREEN
223	PSO7M	PHLP HD SCR M4-.7 X 8
226	PSB1020226	BRACKET
231	PCAP72M	CAP SCREW M10-1.5 X 30
232	PSB1020232	THREADED RETAINER
233	PSB1020233	ADJUSTMENT LEVER
234	PW04M	FLAT WASHER 10MM
235	PB56M	CAP SCREW M10-1.5 X 20
240	PSB1020240	COOLANT PUMP 1/8HP 110/220V 1PH
241	PS11M	PHLP HD SCR M6-1 X 16
242	PLW03M	LOCK WASHER 6MM
243	PSB1020243	PIPE ELBOW 3/8 X 3/8"
245	PSB1020245	COOLANT HOSE 3 X 1300MM
246	PSB1020246	COOLANT TANK
250	PSB1020250	CABINET ASSEMBLY
250-1	PSB1020250-1	LEFT CABINET PANEL
250-2	PSB1020250-2	FRONT CABINET PANEL
250-3	PSB1020250-3	REAR CABINET PANEL W/DOOR
250-4	PSB1020250-4	TOP RIGHT CABINET PANEL
250-5	PSB1020250-5	BOTTOM RIGHT CABINET PANEL
250-6	PSB1020250-6	SHELF PANEL
258	PFH23M	FLAT HD SCR M8-1.25 X 16
259	PW01M	FLAT WASHER 8MM
260	PNO3M	HEX NUT M8-1.25
261	PSB1020261	VISE TRAVEL STOP

# Head



# Head Parts List

REF	PART #	DESCRIPTION
1	PSB1020001	BOW CASTING
2	PSB1020002	ANCHOR BRACKET
2-1	PSB1020002-1	ANCHOR PLATE
2-2	PS09M	PHLP HD SCR M5-.8 X 10
3	PSB1020003	MOUNT SHAFT
4	PCAP14M	CAP SCREW M8-1.25 X 20
5	PSB1020005	BEARING CHIP COVER
6	P32006	TAPER ROLLER BEARING 32006
7	PLW04M	LOCK WASHER 8MM
8	PB118M	HEX BOLT M8-1.25 X 45
9	PNO3M	HEX NUT M8-1.25
10	PSB1020010	POINTER
10-1	PSB1020010-1	PRESSURE GAUGE
11	P51203	THRUST BEARING 51203
12	PSB1020012	HANDWHEEL HANDLE
13	PSB1020013	BLADE TENSION HANDWHEEL
14	PSB1020014	LEADSCREW LOCK WASHER 16MM
15	PSB1020015	BLADE TENSION LEADSCREW
16	PNI3M	HEX NUT M16-2
17	PCAP14M	CAP SCREW M8-1.25 X 20
18	PSB1020018	FIXED BLOCK
19	PRP28M	ROLL PIN 5 X 40
20	PCAP71M	CAP SCREW M10-1.5 X 60
21	PSB1020021	FIXED BLOCK
22	PCAP14M	CAP SCREW M8-1.25 X 20
23	PSS11M	SET SCREW M6-1 X 16
25	PSB1020025	LEFT BLADE GUIDE BRACKET
26	PSS16M	SET SCREW M8-1.25 X 10
27	PSB1020027	KNOB BOLT M6-1 X 15
28	PSB1020028	CONNECTING TUBE
29	PSB1020029	TUBE COVER
30	PW04M	FLAT WASHER 10MM
32	PS62M	PHLP HD SCR M6-1 X 30
35	PB05M	HEX BOLT M6-1 X 8
38	PSB1020038	LEFT BLADE ADJUSTMENT BRACKET
39	PSS09M	SET SCREW M8-1.25 X 20
40	PNO3M	HEX NUT M8-1.25
41	PSB1020041	FRONT BLADE GUIDE
42	PSB1020042	REAR BLADE GUIDE
43	PSB1020043	REAR BLADE GUIDE SHAFT
44	P608ZZ	BALL BEARING 608ZZ
45	PR39M	EXT RETAINING RING 8MM
46	PSB1020046	FRONT BLADE GUIDE SHAFT
47	PS68M	PHLP HD SCR M6-1 X 10
48	PSB1020048	LEFT BLADE GUARD
49	PSB1020049	POWER SWITCH ASSEMBLY
49-1	PSB1020049-1	LIMIT SWITCH BRACKET
49-2	PS51M	PHLP HD SCR M4-.7 X 30
49-3	PW03M	FLAT WASHER 6MM
49-4	PS68M	PHLP HD SCR M6-1 X 10

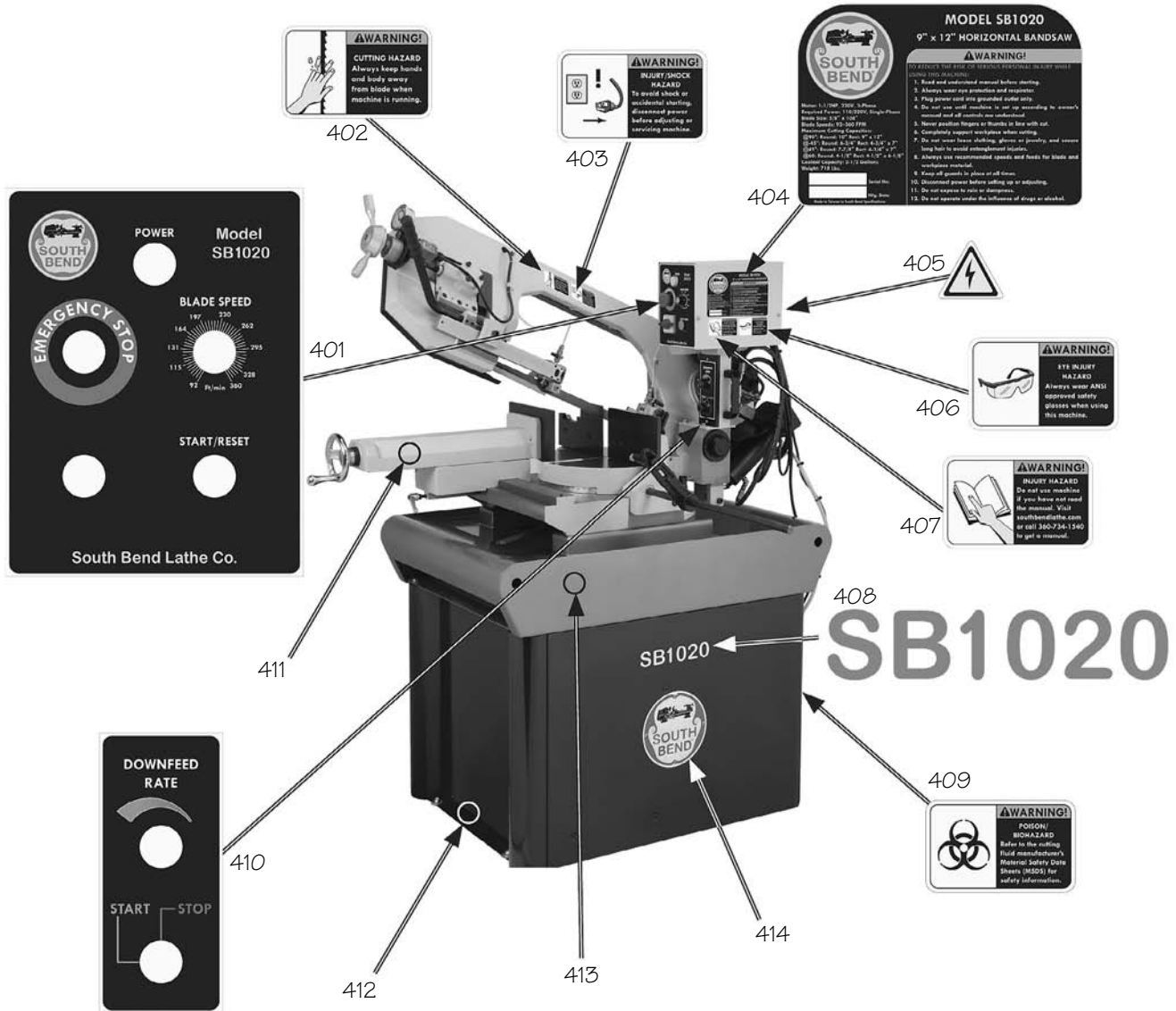
REF	PART #	DESCRIPTION
49-5	PNO1M	HEX NUT M6-1
50	PSB1020050	LIMIT SWITCH BRACKET
50-1	PSB1020050-1	LIMIT SWITCH
50-2	PS51M	PHLP HD SCR M4-.7 X 30
51	PSB1020051	SCALE
52	PSS02M	SET SCREW M6-1 X 6
53	PRIV009M	STEEL FLUTED RIVET 2 X 6MM
54	PSB1020054	RIGHT BLADE ADJUSTMENT BRACKET
55	PSS02M	SET SCREW M6-1 X 6
56	PBHS20M	BUTTON HD CAP SCR M8-1.25 X 30
58	PSB1020058	RIGHT BLADE GUARD
59	PW02M	FLAT WASHER 5MM
60	PS08M	PHLP HD SCR M5-.8 X 12
63	PCAP47M	CAP SCREW M10-1.5 X 40
64	PCAP64M	CAP SCREW M10-1.5 X 25
65	PSB1020065	HEAD PIVOT SHAFT
71	PSB1020071	MOTOR 1-1/2HP 220/440V 3PH
71-1	PK11M	KEY 6 X 6 X 40
71-2	PSB1020071-2	MOTOR FAN COVER
71-3	PSB1020071-3	MOTOR FAN
71-4	PSB1020071-4	MOTOR JUNCTION BOX
72	PB08M	HEX BOLT M6-1 X 20
73	PLW03M	LOCK WASHER 6MM
74	PSB1020074	GEAR BOX ASSEMBLY
75	PLW06M	LOCK WASHER 10MM
76	PCAP64M	CAP SCREW M10-1.5 X 25
77	PSB1020077	GEARBOX COVER
78	PSB1020078	HOSE FITTING 8MM X 1/4PT
79	PCAP28M	CAP SCREW M6-1 X 15
80	PSB1020080	3-WAY VALVE
81	PSB1020081	COOLANT TUBE 6 X 240MM
82	PSB1020082	COOLANT VALVE ASSEMBLY
83	PSB1020083	HOSE FITTING 6MM X 18PT
84	PSB1020084	COOLANT TUBE 6 X 800MM
85	PCAP64M	CAP SCREW M10-1.5 X 25
86	PSB1020086	DRIVE SHAFT WASHER
87	PK118M	KEY 8 X 7 X 50
88	PSB1020088	DRIVE SHAFT
89	PSB1020089	KEY 8 X 7 X 25
90	P6208ZZ	BALL BEARING 6208ZZ
91	PSB1020091	SPRING BRACKET
92	PSB1020092	EXTENSION SPRING
92-1	PSB1020092-1	SPRING CONNECTOR
93	PNO2M	HEX NUT M10-1.5
93-1	PSB1020093-1	BOLT CUSHION
94	PCAP173M	CAP SCREW M10-1.5 X 110
96	PSB1020096	IDLER WHEEL
99	PSB1020099	SPANNER NUT
100	PSB1020100	BLADE 0.032 X 1 X 108-1/8 5-8TPI

# Head Parts List

REF	PART #	DESCRIPTION
101	PSB1020101	DRIVE WHEEL
102	PSB1020102	DRIVE SHAFT FLAT WASHER
103	PB49M	HEX BOLT M12-1.75 X 20
104	PSB1020104	BLADE COVER
105	PSB1020105	KNOB BOLT M6-1 X 14
106	PW03M	FLAT WASHER 6MM
107	PS09M	PHLP HD SCR M5-.8 X 10
108	PSB1020108	HOSE CLIP 8MM
109	PCAP11M	CAP SCREW M8-1.25 X 16
202	PSB1020202	SPRING CLAMPING BOLT M10-1.5
202-1	PNO2M	HEX NUT M10-1.5
294	PSB1020294	BLADE BRUSH ASSEMBLY
294-1	PSB1020294-1	BRUSH BRACKET
294-2	PSB1020294-2	BRUSH
294-3	PB29M	HEX BOLT M6-1 X 30

REF	PART #	DESCRIPTION
294-4	PW03M	FLAT WASHER 6MM
294-5	PNO1M	HEX NUT M6-1
294-6	PW03M	FLAT WASHER 6MM
294-7	PBHS11M	BUTTON HD CAP SCR M6-1 X 10
298	PB73M	HEX BOLT M10-1.5 X 50
298-1	PW04M	FLAT WASHER 10MM
298-2	PNO2M	HEX NUT M10-1.5
300	PSB1020300	HYDRAULIC CYLINDER
300-1	PSB1020300-1	CYLINDER VALVE ASSEMBLY
301	PCAP173M	CAP SCREW M10-1.5 X 110
320	PSB1020320	HOSE CLAMP
321	PSB1020321	LIMIT SWITCH BRACKET
322	PSB1020322	LIMIT SWITCH
323	PCAP21M	CAP SCREW M4-.7 X 30

# Machine Labels



REF	PART #	DESCRIPTION
401	PSB1020401	MAIN CONTROL PANEL LABEL
402	PSBLABEL14HL	CUTTING HAZARD LABEL
403	PSBLABELO2HL	SHOCK WARNING LABEL
404	PSB1020404	MACHINE ID LABEL
405	PSBLABEL15L	ELECTRICITY LABEL
406	PSBLABELO4HL	EYE INJURY HAZARD LABEL
407	PSBLABELO1HL	READ MANUAL LABEL

REF	PART #	DESCRIPTION
408	PSB1020408	MACHINE NUMBER LABEL
409	PSB1020409	BIOHAZARD WARNING LABEL
410	PSB1020410	DOWNFEED CONTROLS LABEL
411	PSBPAINTO1	SB GRAY TOUCH-UP PAINT
412	PSBPAINTO3	SB DARK BLUE TOUCH-UP PAINT
413	PSBPAINTO2	SB LIGHT BLUE TOUCH-UP PAINT
414	SB1320	SOUTH BEND NAMEPLATE 125MM

**⚠ WARNING**

The safety labels provided with your machine are used to make the operator aware of the machine hazards and ways to prevent injury. The owner of this machine **MUST** maintain the original location and readability of these safety labels. If any label is removed or becomes unreadable, **REPLACE** that label before using the machine again. Contact South Bend Lathe Co. at (360) 734-1540 or [www.southbendlathe.com](http://www.southbendlathe.com) to order new labels.

This quality product is warranted by South Bend Lathe Company to the original buyer for one year from the date of purchase. This warranty does not apply to consumable parts, or defects due to any kind of misuse, abuse, negligence, accidents, repairs, alterations or lack of maintenance. We do not reimburse for third party repairs. In no event shall we be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our products.

We do not warrant or represent that this machine complies with the provisions of any law, act, code, regulation, or standard of any domestic or foreign government, industry, or authority. In no event shall South Bend's liability under this warranty exceed the original purchase price paid for this machine. Any legal actions brought against South Bend Lathe Company shall be tried in the State of Washington, County of Whatcom.

This is the sole written warranty for this machine. Any and all warranties that may be implied by law, including any merchantability or fitness, for any purpose, are hereby limited to the duration of this warranty. To take advantage of this warranty, contact us by mail or phone to give us the details of the problem you are having.

Thank you for your business and continued support.



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**FAX: (360) 676-1075 (International)**

**FAX: (360) 734-1639 (USA only)**

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